R EX

Vol. 87. Part 22. Pp. 529-680, 9 pls. 6th December, 1938

IMP. INST. ENT.
— LIBRARY —
15 DEC 1938
SERIAL En. 344
SEPARATE

THE

TRANSACTIONS

OF THE

ROYAL ENTOMOLOGICAL SOCIETY

OF

LONDON

World List abbreviation: *Trans. R. ent. Soc. Lond.*

CONTENTS

PAGE

MICKEL, CLARENCE E., Ph.D. The neotropical Mutillid wasps of the genus *Timulla* Ashmead (Hymenoptera: MUTILLIDAE) . . . 529–680, 9 pls.

LONDON:
PUBLISHED BY THE SOCIETY AND
SOLD AT ITS ROOMS, 41, QUEEN'S GATE, S.W.7

Price £2 2s. 0d.

THE ROYAL ENTOMOLOGICAL SOCIETY OF LONDON

Founded, 1833. Incorporated by Royal Charter, 1885.

PATRON—HIS MAJESTY THE KING.

OFFICERS and COUNCIL for the SESSION 1938–1939.

J. C. F. Fryer, O.B.E., M.A., *President.*

H. M. Edelsten
A. D. Imms, M.A., Sc.D., F.R.S. } *Vice-Presidents.*
H. Willoughby Ellis, M.I.E.E.

Francis Hemming, C.M.G., C.B.E., *Treasurer.*

O. W. Richards, M.A., D.Sc., *Secretary.*

F. J. Griffin, A.L.A., *Registrar.*

Other Members of Council.

R. B. Benson, M.A.
Brig.-Gen. B. H. Cooke, C.M.G., C.B.E., D.S.O.
C. N. Hawkins.
L. G. Higgins, M.A., F.R.C.S.
B. M. Hobby, M.A., D.Phil.
Sir Guy A. K. Marshall, C.M.G., D.Sc., F.R.S.
N. D. Riley.
W. H. T. Tams.
W. R. Thompson, Ph.D., D.Sc., F.R.S.
B. P. Uvarov, D.Sc.
V. B. Wigglesworth, M.A., B.Ch., M.D.

Trustees of the Society.

R. W. Lloyd.
Sir Edward B. Poulton, F.R.S.

Finance and House Committee.

H. Willoughby Ellis, M.I.E.E. (Chairman).

Prof. P. A. Buxton, M.A.
Brig.-Gen. B. H. Cooke, C.M.G., C.B.E., D.S.O.
G. Fox-Wilson.
C. N. Hawkins.
R. W. Lloyd.

Publication Committee.

W. R. Thompson, Ph.D., D.Sc., F.R.S. (Chairman).

H. E. Andrewes.
M. Burr, D.Sc., F.G.S., A.R.S.M.
B. M. Hobby, M.A., D.Phil.
N. D. Riley.
V. B. Wigglesworth, M.A., B.Ch., M.D.

Library Committee.

R. B. Benson, M.A. (Chairman).

E. A. Cockayne, M.A., M.D., F.R.C.P.
H. M. Edelsten.
B. M. Hobby, M.A., D.Phil.
W. H. T. Tams.
B. P. Uvarov, D.Sc.

Committee for the Protection of British Insects.

W. G. Sheldon (Chairman).

Capt. E. Bagwell-Purefoy.
C. L. Collenette.
W. J. Dow.
J. C. F. Fryer, O.B.E., M.A.
Col. F. A. Labouchere.
N. D. Riley.
H. M. Edelsten (Secretary).

The Executive Officers of the Society are *ex-officio* members of all Committees.

DELEGATES OF THE SOCIETY TO:

1. **British National Committee for Biology** (Royal Society).
   Sir Thomas Hudson Beare, LL.D., F.R.S.E., appointed 1933.
   Dr. Karl Jordan, F.R.S., appointed 1936.
2. **Conference of Delegates of Corresponding Societies of the British Association for the Advancement of Science.**
   Sir Edward Poulton, F.R.S., appointed 1937.
3. **International Congress of Entomology** (Berlin 1938).
   J. C. F. Fryer, O.B.E., M.A. *Francis Hemming, C.M.G., C.B.E.*
   A. D. Imms, M.A., Sc.D., F.R.S.
4. **Local Committee of Management of Wicken Fen.**
   Mr. H. M. Edelsten. *Mr. E. C. Bedwell.*
   [Delegates nominated by Committee for the Protection of British Insects.]
5. **National Trust for Places of Historic Interest or Natural Beauty.**
   Mr. W. G. Sheldon, appointed 1922.
6. **New Forest Association.**
   Mr. W. Fassnidge, appointed 1934.
7. **Royal Meteorological Society. Phenological Committee.**
   Dr. C. B. Williams, appointed 1937.

THE NEOTROPICAL MUTILLID WASPS OF THE GENUS *TIMULLA* ASHMEAD (HYMENOPTERA: MUTILLIDAE)*

By Clarence E. Mickel, Ph.D.

(*University of Minnesota.*)

With Plates 1 to 9.

(Read 19th October, 1938.)

The Mutillid wasps of Mexico, Central America, South America and the West Indies have been casually studied by a number of investigators in the past. The published papers on the fauna consist for the most part of descriptions of new species, sometimes arranged in groups, but often without any attempt at a systematic arrangement. As late as 1900 the recognition of genera in the Mutillidae was definitely discouraged. Dalle Torre's Catalogue of the Hymenoptera (1897) lumped all the Mutillidae in the single genus *Mutilla*. A number of the neotropical genera now recognised were proposed by Ashmead (1899 and 1903–04) and André (1903) in their synoptic treatments of the family. Although many of these genera are now recognised, not a single published paper exists containing a comprehensive systematic treatment of even one genus. This has been due in part to the large number of described species and the still larger number of undescribed species to be dealt with, and in part to the brevity of the published descriptions. For example, in the case of the genus *Timulla* herein discussed, only sixty-eight species, exclusive of synonyms, of the one hundred and seventy-five recognised were previously described. Many of the undescribed species resembled the described species in all the characters mentioned in the original descriptions. They were only recognised as new after a study of the types of all described species had been made. The inadequacy of the descriptions was also apparent in the study of the various collections of identified Mutillid specimens in the more important museums of the world. Innumerable cases existed in the various museums of series of specimens identified as a single species which in reality included specimens of at least two species and sometimes as many as six or eight species. Some of the descriptions include so little information that they cannot be assigned to their proper genera without resorting to an examination of the type specimens. This is confirmed by the long list of " species incertis sedis " in André's (1903) synopsis of the Mutillidae of the world. A preliminary study of the type specimens of all the species described for the New World has therefore been made before attempting a systematic treatment of any genus included in the neotropical fauna. This was the primary purpose of a year's study in Europe in 1930–31 made possible by the John Simon Guggenheim Memorial Foundation.

Sexual dimorphism presents a further difficulty in any study of the Mutillidae. Workers have commented on it again and again. The two sexes are so different in form and colour that it is necessary to treat them as individual species unless definite biological evidence is at hand to demonstrate that any particular female represents the opposite sex of some particular male.

* Paper no. 1547 of the Scientific Journal Series of the Minnesota Agricultural Experiment Station.

Occasionally the two sexes can be correlated on geographical evidence by elimination, but usually it is necessary to have more definite evidence such as capturing the two sexes *in copula* or rearing the two sexes from the same host. Even the latter method cannot always be relied upon if one host is attacked by more than one Mutillid. It is particularly misleading and confusing to assume that a male and female represent a single species because they were collected at the same time and place. Burmeister (1875) used this method with the result that most of his correlations were incorrect. In some of his correlations the one sex proved to belong to a different genus than the other.

Knowledge of the neotropical MUTILLIDAE begins with two species described by Linnaeus (1758), both of which are females. Linnaeus did not associate males with any of the female Mutillids mentioned in his *Systema Naturae*. By 1800 approximately fifteen species had been recorded and described from the neotropical region, principally by Fabricius. Klug (1821) described and figured twenty-seven species from Brazil, most of which were new. He divided them into two sections based on the eyes of the males, the eyes emarginate within or the eyes entire. Burmeister (1854) made a second contribution on the Mutillids of Brazil, describing additional species, arranging them in three main groups according to eye characters, further subdividing these groups in one case on the form of the first abdominal segment, and in another on the form of the head. Gerstaecker (1874) revised the neotropical Mutillids, dividing them into nine groups of females and eight groups of males, including two hundred and thirteen species. Many of his groups correspond to our generic conceptions of the present time. Burmeister (1875) reported on the Mutillids of Argentina, using the same grouping as proposed by him in 1854 but giving the groups definite names, thus his three main divisions are called Liophthalmae, MEGALOCRATINAE and Helophthalmae. Cameron (1894) in discussing the Mutillids of Mexico and Central America arranged the species under two genera, *Mutilla* and *Sphaeropthalma*. Cresson (1902) in a paper on Brazilian MUTILLIDAE entirely ignored the genera proposed by Ashmead (1899) to receive the New World MUTILLIDAE and placed all of them in the genus *Mutilla*. André (1903) was the first to attempt to arrange the New World species in genera, although even he retained the species which form the subject of this paper, in the genus *Mutilla*, and was unable to assign many species to any genus because of the nature of the original descriptions. Many other authors have contributed descriptions of new species most of which were assigned to the genus *Mutilla* at the time of their description.

This paper is the first contribution towards a revision and monograph of the neotropical genera of MUTILLIDAE. The genus *Timulla* has been selected as the first to be reported upon because I (1937) have recently completed a study of the genus *Timulla* in the United States and Canada. Continuation of the study of the neotropical species of the same genus has resulted in a comprehensive view of the entire New World fauna of *Timulla*. All the species known to occur in South America, Central America, West Indies and Mexico are included in this report as well as those species known from Texas, New Mexico and Arizona in the United States which are likely to be found in Mexico.

I am particularly indebted to the following institutions for facilities extended to me while making a study of type specimens and for the privilege of studying their determined and undetermined material: United States National Museum, Washington, D.C.; Carnegie Museum, Pittsburg, Pa.; American Entomological Society, Philadelphia, Pa.; British Museum (Natural History), London; Hope Department of Zoology (Entomology), Oxford University,

Oxford; Zoologisches Museum der Universität, Berlin; Deutsches Entomologisches Institut, Berlin-Dahlem; Zoological Museum, Copenhagen, Denmark; Muséum National d'Histoire Naturelle, Paris; Museo Zoologia et Anatomia comparata della R. Universitá, Turin; Museo Civico di Storia Naturale, Genoa, Italy; and Naturhistorisches Staatsmuseum, Vienna. A number of other institutions and individuals have loaned material or contributed in some way to the advancement of this study. To all of these I wish to express my heartiest thanks and appreciation. I wish particularly to acknowledge my thanks to Dr. H. Bischoff, Zoologisches Museum der Universität, Berlin, for his kindly help and suggestions while I was studying the Klug, Gerstaecker and Burmeister types. The drawings of the last tergite of the males would not have been available except for the aid received from the Works Progress Administration.

Timulla Ashmead.

Mutilla (Section A, in part) Klug, 1821, *N. Acta Acad. Caes. Leopold. Carol. nat. cur.* **10** (2) : 305.
Mutilla Burmeister (in part), 1854, *Abh. naturf. Ges. Halle, SitzB.* **1854** : 19.
Mutilla (subgenus *Mutilla*) (Division I) Blake, 1871, *Trans. Amer. ent. Soc.* **3** : 227.
Mutilla (groups *lineola* and *mediata*) Gerstaecker, 1874, *Arch. Naturg.* **40** : 300 and 322.
Mutilla (division Helophthalmae, subdivision Longitergae) Burmeister, 1875, *Bol. Acad. nac. Ci. exact. Univ. Cordova* **1** : 496.
Mutilla (Division I) Blake (in part), 1886, *Trans. Amer. ent. Soc.* **13** : 194, 281.
Mutilla Cresson (in part), 1887, *Trans. Amer. ent. Soc.* suppl. : 263.
Mutilla Cameron (in part), 1894, *Biologia Centrali-Americana*, Hymenoptera, **2** : 259.
Timulla, Ashmead, 1899, *J. N.Y. ent. Soc.* **7** : 55.
Mutilla (group *hexagona*) Fox, 1899, *Trans. Amer. ent. Soc.* **25** : 269.
Mutilla Cresson (in part), 1902, *Trans. Amer. ent. Soc.* **28** : 1.
Mutilla André (in part), 1903, *Genera Insectorum* **11** : 42.
Mutilla André, 1908, *Ann. Mus. nac. Buenos Aires* (3) **10** : 212.
Mutilla (subgenus *Timulla*) Bradley, 1916, *Trans. Amer. ent. Soc.* **42** : 199–214.
Timulla (subgenus *Trogaspidia*) Mickel, 1933, *Ann. ent. Soc. Amer.* **26** : 388–415.
Timulla (subgenus *Trogaspidia*) Mickel, 1934, *Philipp. J. Sci.* **54** : 91–218.
Timulla (subgenus *Trogaspidia*) Mickel, 1935, *Trans. R. ent. Soc. Lond.* **83** : 218–271.
Timulla (subgenus *Timulla*) Mickel, 1937, *Ent. Amer.* (n.s.) **17** : 1–119.

Genotype. *Mutilla dubitata* Smith, sole species originally included by Ashmead.

Diagnostic characters of males : Eyes large, strongly ovate, deeply emarginate within; first abdominal segment small and gradually dilated to the apex, completely sessile with the second segment, not at all transversely developed; tegulae large, conchiform; vertex rounded throughout, not elevated nor flattened, punctate throughout, not at all longitudinally striato-punctate; felt lines present on second abdominal tergite only, not present on the second sternite; distance between origin of vein M on vein R and the base of the stigmatic cell equal to or less than the length of the latter.

Diagnostic characters of the females : Eyes strongly ovate; first abdominal segment small and gradually dilated to the apex, completely sessile with the second, not at all transversely developed; dorsum of thorax rectangular in outline; pygidial area present and well defined; second abdominal tergite usually maculated with two spots or lines of pale, glittering pubescence.

The genus *Timulla* as defined above includes species from Africa, Asia, Australia and the islands of the Pacific Ocean for which Ashmead (1899) erected the genus *Trogaspidia*, and the New World species for which *Timulla* was originally proposed. Both of these groups of species have been placed in the genus *Mutilla* L. until recent years. Bradley (1916) used *Timulla* as a subgenus of *Mutilla* L. for the North American forms and Bischoff (1920) used *Trogaspidia* as a genus to receive the African forms. If the genotypes of *Mutilla*

Linnaeus, *Timulla* Ashmead and *Trogaspidia* Ashmead are critically compared it will be seen that *Mutilla* is very different from either *Timulla* or *Trogaspidia*. Both the males and the females of the latter two differ generically from *Mutilla* in external characters, while the genitalia of the males are very different from *Mutilla*. There is really no good taxonomic reason for using the generic name *Mutilla* L. for any of the New World species. *Timulla* Ashmead should be used for those American Mutillids which satisfy the above diagnosis.

I have called attention several times (1933, 1934, 1935 and 1937) to the similarities between *Timulla* Ashmead and *Trogaspidia* Ashmead. No morphological characters have been found which can be used definitely to separate them. In general the males of *Timulla* have the last tergite of the abdomen definitely sculptured and more specialised than *Trogaspidia*, while the females have the pale pubescent markings of the second tergite more or less linear rather than circular, as in *Trogaspidia*. These characters are not infallible, as certain males of *Timulla* have the last tergite practically unsculptured and some males of *Trogaspidia* have the last tergite sculptured. There are females of both *Timulla* and *Trogaspidia* which have no pubescent spots on the second tergite, and certain females of *Timulla* have the spots of the second tergite tending towards circular. I have therefore united these two groups under the generic name *Timulla* since it has page priority. Both names are useful in a subgeneric sense because of the large number of species involved. *Trogaspidia* for the Old World species, and *Timulla* for the New World species.

Subgenus *Timulla* Ashmead.

Timulla Ashmead, 1899, *J. N.Y. ent. Soc.* **7** : 55.
Mutilla (subgenus *Timulla*) Bradley, 1916, *Trans. Amer. ent. Soc.* **42** : 199–214.
Timulla (subgenus *Timulla*) Mickel, 1937, *Ent. Amer.* (n.s.) **17** : 1–119.

Type of subgenus. *Mutilla dubitata* Smith.

Diagnostic characters. Same as for the genus.

The first neotropical species of this subgenus to be described was the male of *mediata* which Fabricius (1804) placed in the genus *Dorylus*, not recognising it as a Mutillid. In the same work he described the female under the name *lineola*. The fact that *Dorylus mediata* was a male Mutillid was not discovered until 1842 by Westwood. Klug (1821) described a male, *rufiventris*, and several females but placed them in a section with other males having emarginate eyes (genus *Ephuta*), and with other females which really belong to genera having circular eyes. Say (1836) recognised his *hexagona* (= *vagans* Fabr.) as differing from other United States Mutillids but assigned it to the Old World genus *Mutilla*. Burmeister (1854) did not recognise *lineola* Fabr. as being different from the other eighteen species which he included in his Division III, subdivision A. Blake (1871) assigned the North American Mutillid males with emarginate eyes to the genus *Mutilla* L. and separated the latter into two divisions, Division I including the males and females now placed in the subgenus *Timulla*. Gerstaecker (1874) used the term "group *mediata*" for the males, and "group *lineola*" for the females of this subgenus. Burmeister (1875) placed *lineola* and *phalerata* in his ninth subdivision Longitergae which formed a part of his third division Helophthalmae. Blake (1886) continued the use of his own Division I, genus *Mutilla* as proposed by him in 1871. Cameron (1894) arranged the Mexican and Central American species as the first forty species of his genus *Mutilla*, the latter including only males with emarginate eyes. Ashmead (1899) proposed the genus *Timulla* with *Mutilla*

dubitata Smith as genotype. According to Ashmead's definition the genus *Timulla* included those species which Blake had assigned to *Mutilla*, Divisio I, which Gerstaecker included in his groups *lineola* and *mediata*, which Burmeister included in his subdivision Longitergae, and the first forty species of Cameron's *Mutilla*. Ashmead's genus *Timulla* was not accepted by his contemporaries. Fox (1899) continued the use of an all-inclusive genus *Mutilla* and used " group *hexagona* " to designate the North American species. Cresson (1902) used the generic term *Mutilla* for all his Brazilian species without any attempt to recognise genera, subgenera or groups. André (1903) reduced *Timulla* Ashmead to a synonym of *Mutilla* L. and restored all the species to that genus. As late as 1908, André used the name *Mutilla* in a catalogue of the Argentine species. Bradley (1916) was the first to use Ashmead's *Timulla* but reduced it to a subgenus of *Mutilla* L. As stated above, I have used the generic term *Timulla* for both the New World and Old World species, and (1937) the subgeneric name *Timulla* for the New World species.

Taxonomic characters.

The principal morphological characters of the males useful for separating the species are as follows: The conformation of the last abdominal tergite, which is sculptured and modified into various figures as illustrated hereafter; the form of the scutellum may be low, evenly convex, or elevated medially and gibbose; those with the evenly convex scutellum occur principally from Panama northward and those with the gibbose scutellum from Costa Rica southward; most of the males have the mandibles deeply excised beneath forming a conspicuous tooth beneath near the base, but a few have the underside of the mandibles entire, not excised; the tegulae of most males are glabrous and impunctate throughout except the anterior and inner margins, and often the inner posterior fourth is punctate and pubescent, but a few species have the tegulae pubescent throughout; the enclosed space of the dorsum of the propodeum is elongate in form and is defined by a slight elevated ridge which is not always constant in form, that is, the exact form of the enclosed space may vary slightly from specimen to specimen; in most species the ridge defining the enclosed space is the same height throughout, but in a few the ridge is elevated at the posterior tip of the enclosed space into a tubercle; one of the best and most constant characters of the males is the conformation of the clypeus; the median area of the clypeus is usually almost entirely glabrous, without punctures, and the posterior part of this median area is elevated and modified in various ways as mentioned in the various descriptions; in a few species the anterior margin of the clypeus is also elevated; the antennae offer some interesting characters in a few species; the normal antenna may be considered as one entirely black in colour with the scape slightly curved, bicarinate longitudinally beneath, and with the first and second segments of the flagellum equal in length; a few have the scape strongly dilated and flattened distally and with one carina much more strongly developed than the other; a few others have the antennae marked with yellow beneath; in those with the yellow colour most extended the distal half of the scape, the pedicel, and the first two or three segments of the flagellum may be yellowish beneath; the size of the ocelli does not vary so much among the neotropical species as in the nearctic species, but one or two species are characterised by very large ocelli; in a number of species the posterior, inner angle of the middle coxae is armed with a tooth or tubercle while others have the middle coxae simple, without any such modification; the sixth

and seventh sternites are usually armed at the postero-lateral angles with tubercles, while the hypopygium or last sternite has a pair of lateral ridges on the anterior half; the presence or absence of tubercles on the sixth and seventh sternites, and the form of the ridges on the hypopygium are useful characters; in a few species the punctation of the mesonotum and the second abdominal tergite differs from others to such an extent that they may be recognised by the character of this punctation; finally, colour, both of the integument and of the pubescence, has its part to play; the greatest differences in the colour of the integument are found in the segments of the abdomen, varying from entirely ferruginous to ferruginous with one or more segments black; the colour of the pubescence on the pronotum and the abdomen varies in different species, although most have the prothorax pale pubescent, and the abdomen fulvous pubescent; wherever these colours vary among species they are replaced with black. The term "pale pubescent" is used throughout this paper in descriptions of both males and females to designate a glittering, silvery white pubescence.

The males of the neotropical region may be arranged in what appear to be natural groups by using a combination of characters, principally the form of the last abdominal tergite, form of scutellum and the form of the mandibles. These groups have not been dignified with names but have been used as a basis for arranging the sequence of the males discussed in the text. These groups are as follows: (1) *pyrene* to *cordillera*; (2) *flavofasciata* and *dulcis*; (3) *leona* to *divergens*; (4) *scoparia* to *tinctura*; (5) *leucippe* to *factiosa*; (6) *rufogastra* to *valeria*; (7) *tarpeia* to *talus*; (8) *manga* to *rubripes*; (9) *connexa* to *adrastis*; (10) *ordinaria* to *simplex*; (11) *aerolla* and *bituberculata*; (12) *orthona* and *osberti*; (13) *amulae* to *navasota nebulosa*; and (14) *antiqua* to *senex*.

The principal morphological characters useful in separating the species of females are as follows: the sculpture of the pygidium may be longitudinally striate throughout, longitudinally rugose, irregularly rugose, rugose anteriorly and granulate posteriorly, rugose and glabrous, entirely granulate or entirely glabrous; the thorax is always rectangular in general outline but the mesothoracic area may be more or less narrowed so that the lateral margins of the dorsum of the thorax may be entirely straight or more or less emarginate medially; the comparative width of the thorax anteriorly and posteriorly is also useful; in many species the two widths are equal, in many others the posterior width is greater than the anterior width, and in a few the posterior width is narrower than the anterior width; in expressing these widths in the following descriptions the widest part of the prothoracic area is taken as the anterior width and the widest part of the dorsum of propodeum is taken as the posterior width; in most species the scutellar scale is well developed but in a few species it is entirely absent; in many species there is a well-defined transverse groove or suture immediately anterior to the scutellar scale; in others, this mesonotal-scutellar suture, as I have called it, is indistinct or entirely absent; the punctation of the sides of the propodeum is often significant, varying from fine, sparse punctures in some species to coarsely, confluently punctate in others; the punctation of the second abdominal tergite is characteristic; in many species the tergite is finely punctate with larger punctures scattered throughout; the larger punctures are visible through the denser pubescence and are especially noticeable laterally; one of the most striking features of the females is the pale pubescent pattern of the abdominal tergites; the first tergite usually has a complete band at the posterior margin, but in a few species this band is interrupted medially and may even be reduced to a pair

of lateral spots in alignment with the longitudinal markings of the second tergite; the lateral margins of the second tergite are pale pubescent in all the species, at least the posterior two-thirds of each lateral margin; since this character is present in all females it is not mentioned in the descriptions; the second tergite, however, has a pale pubescent pattern which is modified in various ways in different species; in its most complete form there is a pair of longitudinal stripes extending from the anterior to the posterior margin and the latter margin has a complete band from one side to the other; both the stripes and the posterior band may vary in width among different species, and the anterior margin of the band may be entirely straight or distinctly sinuate; this complete pattern may be modified in various ways, that is, the posterior band may be interrupted medially or it may be entirely absent so that the posterior margin is only maculated by the tips of the longitudinal stripes; the latter may be interrupted just anterior to the posterior marginal band or spot, or they may be reduced to a pair of anterior spots beginning at the anterior margin and extending to the transverse midline or slightly beyond; in many cases these anterior spots are distinctly linear but may be elongate ovate, or in a few cases almost circular; tergites three to five in nearly all cases have a pair of spots on each which are usually linear; those on tergite three are always more widely separated than those on tergite five and thus a wedge-shaped dark pubescent area is enclosed medially; these paired spots on tergites three to five are aligned with the stripes or anterior spots of the second tergite; in some cases the spots on the fifth tergite are united medially along the posterior margin; in a few species the spots on tergites three to five are quadrate instead of linear, and in some others the spots are transverse, extending to the lateral margins of each tergite; colour also has some value in the females; the pubescent markings in most species are pale and glittering but in a few they are distinctly golden; a very few species are entirely black, but the most have the thorax at least predominantly ferruginous; a large number of species have the thorax entirely ferruginous, but some have the pleural areas more or less blackish and a few have the propodeum maculated with black medially and posteriorly; in a few species the black of the pleural areas extends on to the mesonotum so that the dorsum of the thorax has a pair of lateral, median black spots; the majority of the species have entirely black heads and a minority have entirely ferruginous heads; in those species with black heads the antennal tubercles may be ferruginous or black; the legs vary from bright ferruginous through dark mahogany red to black; in the keys ferruginous is used for those with distinctly bright ferruginous legs and dark mahogany red is interpreted as black.

An attempt has been made to find some combination of the above characters that would separate the females into groups correlating with those of the males, using those cases where both sexes of a species are known as checks, but no criteria could be found which could be relied upon to do this. In my opinion those females with a more or less glabrous pygidium and the posterior marginal band of the second tergite interrupted or absent probably represent the opposite sex of some male in the group with *manga*, but apparently all of them do not belong there; the females of the group of males including *scoparia* probably all have complete longitudinal stripes on the second tergite, but not all females with complete longitudinal stripes belong with those males. This situation has complicated the possibility of arranging the neotropical species of *Timulla* in any sort of phylogenetic sequence.

The males have been arranged in groups as indicated above and in those cases where the two sexes are known the female is of course placed with its male.

In some cases certain other females seem to be definitely related to those females of which the males are known, and they have therefore been interpolated in the sequence with the latter females. There still remains a large number of females which could not satisfactorily be interpolated in this way and they are placed last in the sequence. Probably no really logical phylogenetic arrangement of the species of *Timulla* can be arrived at until most of the females have been placed with their proper males.

Geographical Distribution.

It has been assumed by many workers that Mutillid species are widely distributed and this assumption has led to many misidentifications. It was shown by Mickel (1935) that the Pacific Island species and subspecies were strictly limited in their distribution by water barriers. The neotropical species are limited to the same degree by other barriers, probably mountains, forests, availability of suitable hosts, and isolations which have occurred during geologic changes in the North and South American continents. Most of the neotropical species have a comparatively limited distribution. The most widely distributed species appears to be *mediata* Fabricius which is recorded from Colombia, Trinidad, B.W.I., British Guiana, Surinam, French Guiana, and in the provinces of Para, Bahia and Amazonas in Brazil. Many other species have a much more restricted distribution and are recorded only from a single country or from a few provinces in some of the larger countries such as Mexico, Brazil and Argentine Republic. All of the species recorded from Trinidad, B.W.I., are also known from the northern mainland of South America, but all other species known from the West Indies are restricted to single islands. A few of the species from Colombia are also known from Panama but apparently none of them extends its range into Costa Rica. Conversely a very few species are known from Panama as well as Costa Rica but do not extend their range any farther south. Only a few species are known from the western slope of the Andes in South America, a few in Colombia, three females and three males from Ecuador, three females and three males from Peru and none at all from the western slope in Chile. In Central America and Mexico a number of species occur along the west coast, but in North America north of Mexico no species are known from the western slope of the coastal range. A geographical catalogue of the neotropical species concludes this paper.

Biology.

Nothing is known regarding the biology or the hosts of any of the neotropical species.

Key to the males.

1. Posterior margin of last tergite emarginate medially . . . . . 2.
   Posterior margin of last tergite not emarginate medially 22
2. Mandibles deeply excised beneath and with a conspicuous tooth beneath near the base . . . . . 4.
   Mandibles not at all excised beneath . . . . . 3.
3. Median, impunctate area of last tergite terminating at a sharp, transverse carina, the latter when viewed from the rear distinctly angulate medially; wings pale fuscous . . . . . *dulcis* sp. n. (p. 568).
   Median, impunctate area of last tergite terminating at a pair of tubercles, the area between the latter deeply longitudinally sulcate; wings fuliginous with purple reflections . . . . *flavofasciata* (André) (p. 567).

4. Scutellum gibbose, with a median, longitudinal, smooth, polished area on the anterior half; enclosed area of dorsum of propodeum produced or not posteriorly to form a tubercle . . . . . 11.
   Scutellum evenly convex, not gibbose, punctate throughout; enclosed area of propodeum not produced posteriorly into a tubercle . . . . . 5.
5. Median, impunctate area of last tergite terminating at a transverse carina, the latter much longer than the width of the impunctate area . . . 6.
   Median, impunctate area of last tergite terminating otherwise, no transverse carina present . . . . . 8.
6. Transverse carina of last tergite strongly arcuate, extending through only the median two-fifths of the tergite; pale pubescence sparse on tegulae and dorsum of propodeum . . . . . *leona* (Blake) (p. 568).
   Transverse carina of last tergite slightly arcuate, extending through the median three-fifths of the tergite; pale pubescence thick on tegulae and dorsum of propodeum . . . . . 7.
7. First abdominal segment black
   prominens subsp. *prominens* (Cameron) (p. 569).
   First abdominal segment ferruginous
   prominens subsp. *forreri* (Cameron) (p. 570).
8. Median, impunctate area of last tergite terminating in an inverted U-shaped carina . . . . . *tyro* Mickel (p. 571).
   Median, impunctate area of last tergite terminating in a prominent, compressed tubercle, a subtubercular prominence, or at the beginning of a pair of longitudinal, diverging carinae . . . . . 9.
9. Tegulae pubescent throughout; posterior, inner angles of middle coxae not toothed . . . . . 10.
   Tegulae pubescent only at the anterior and inner margins; posterior, inner angles of middle coxae with a sharp, prominent tooth
   cyra (Cameron) (p. 571).
10. Median, impunctate area of last tergite terminating in a prominent, compressed tubercle; abdomen entirely ferruginous . . *spaco* sp. n. (p. 572).
    Median, impunctate area of last tergite terminating at the beginning of a pair of longitudinal, diverging carinae; last two segments of abdomen black or blackish . . . . . *divergens* sp. n. (p. 573).
11. Posterior margin of median, impunctate area of last tergite distinctly emarginate . . . . . *pyrene* sp. n. (p. 553).
    Posterior margin of median, impunctate area of last tergite not at all emarginate . . . . . 12.
12. Median, impunctate area of last tergite terminating at the junction of the dorsal and posterior faces of the tergite, the two faces not separated by a definite carina nor an inverted V-shaped ridge; posterior face of last tergite slightly concave and with a median, longitudinal carina
    spoliatrix sp. n. (p. 556).
    Dorsal and posterior faces of last tergite separated by a distinct, transverse, arcuate carina, or by an inverted V-shaped, glabrous ridge; posterior face of last tergite more or less concave . . . . . 13.
13. Dorsal and posterior faces of last tergite separated by a distinct, transverse, arcuate carina, the posterior face not triangular in outline . . . . 14.
    Dorsal and posterior faces of last tergite separated by an inverted V-shaped, glabrous ridge, the posterior face therefore triangular in outline . 16.
14. Enclosed space of dorsum of propodeum elevated posteriorly into a distinct tubercle . . . . . *maevia* sp. n. (p. 558).
    Enclosed space of dorsum of propodeum not at all elevated posteriorly . 15.
15. Intermediate coxae with the posterior, inner margin strongly produced to form a lamella with a rounded margin; only the first flagellar segment marked with yellow . . . . . *coxalis* sp. n. (p. 557).

Intermediate coxae with a carina along the posterior margin but without a prominent, lamellate process within; first two flagellar segments and a part of the third beneath, yellowish . . . . . *corumba* sp. n. (p. 560).

16. Enclosed area of propodeum elevated posteriorly to form a distinct tubercle . . . . . 17.

Enclosed area of propodeum not at all elevated posteriorly; last abdominal segment black; antennae entirely black . . . *atricornis* sp. n. (p. 559).

17. Proximal segments of flagellum yellowish beneath . . . . . 18.

Flagellum entirely black . . . . . 19.

18. Glabrous area of clypeus with the posterior margin evenly arcuate, the posterior half to two-thirds of the area almost flat, or evenly shallowly concave; cell R_5 slightly to distinctly less than three times as long as broad . . . . . *mediata* (Fabricius) (p. 560).

Glabrous area of clypeus with the posterior margin elevated and obtusely angulate medially, the posterior half to two-thirds of the area distinctly, transversely concave; cell R_5 slightly to distinctly more than three times as long as broad . . . . . *obtusata* Mickel (p. 563).

19. Scape distinctly dilated and flattened distally, bicarinate beneath with the dorsal carina much higher and more conspicuous than the ventral carina *proclivis* sp. n. (p. 565).

Scape not dilated nor flattened distally, bicarinate beneath but the two carinae equally developed . . . . . 20.

20. Abdomen entirely ferruginous . . . . . *ashmeadi* sp. n. (p. 564).

At least the first abdominal segment black . . . . . 21.

21. Only the first abdominal segment black . . . . *byblis* Mickel (p. 566).

First, and last two abdominal segments black . . *cordillera* sp. n. (p. 566).

22. Mandibles slightly (in *adrastis*) or deeply excised beneath and with a small (in *adrastis*) or conspicuous tooth beneath near the base . . . . . 26.

Mandibles not at all excised beneath, and without a tooth beneath near the base . . . . . 23.

23. Last tergite with a strong, very high, conspicuous, median, longitudinal carina distally; posterior, inner angle of middle coxae not toothed nor tuberculate . . . . . 24.

Median, impunctate area of last tergite terminating in the arms of a distinct Y-shaped carina; posterior, inner angle of middle coxae with a blunt tooth or tubercle . . . . . *senex* (Guérin) (p. 648).

24. Ocelli small, the distance between the margins of the eyes and the lateral ocelli almost three times the greatest diameter of the latter; mesopleura clothed with pale pubescence . . . . *amulae* (Cameron) (p. 637).

Ocelli large, the distance between the margins of the eyes and the lateral ocelli approximately equal to the greatest diameter of the latter; mesopleura clothed with dark fuscous or black pubescence . . . . . 25.

25. Calcaria pale; head, pronotum and anterior half of mesonotum clothed with pale pubescence . . . *navasota* subsp. *navasota* (Bradley) (p. 638).

Calcaria dark brown; head, pronotum and mesonotum clothed for the most part with black pubescence *navasota* subsp. *nebulosa* Mickel (p. 638).

26. Scutellum gibbose, with a median, longitudinal, smooth, polished area on the anterior half . . . . . 45.

Scutellum evenly convex, not gibbose, punctate throughout . . . . 27.

27. Median, impunctate area of last tergite extending to the posterior margin, not interrupted by an elevation of any kind . . . . . 28.

Median, impunctate area of last tergite terminating before the posterior margin in some sort of elevated prominence . . . . . 30.

28. Anterior margin of clypeus emarginate; posterior, inner angles of middle coxae not dentate . . . . . 29.

Anterior margin of clypeus not at all emarginate; posterior, inner angles of middle coxae with a small tooth . . . . . *simplex* sp. n. (p. 633).

29. Mesonotum with moderately large, distinct, well separated punctures; anterior margin of clypeus emarginate medially but not bidentate; abdomen entirely ferruginous . . . . . *bradleyi* sp. n. (p. 632).

Mesonotum closely, confluently punctate; anterior margin of clypeus distinctly bidentate; first abdominal segment black *ordinaria* (Smith) (p. 632).

30. Median, impunctate area of last tergite terminating in a very prominent, polished tooth; posterior margin of last tergite also strongly produced medially into a conspicuous tooth or tooth-like prominence . . . . 31.

Median, impunctate area of last tergite terminating at a short, transverse carina, at a blunt, obscurely bituberculate prominence, or in the arms of a Y-shaped carina . . . . . 32.

31. Scape strongly dilated and flattened distally, the single carina beneath very prominent . . . . . *osberti* (Cameron) (p. 636).

Scape not dilated nor flattened distally, the single carina beneath strong but not prominent . . . . . *orthona* (Cameron) (p. 636).

32. Median, impunctate area of last tergite terminating at a short, transverse carina, or at a blunt, obscurely bituberculate prominence . . . . 33.

Median, impunctate area of last tergite terminating in the arms of a Y-shaped carina, the arms of the Y varying in length from very short, almost obsolete, to as long as the stem of the Y . . . . . 35.

33. Median, impunctate area of last tergite terminating at a short, arcuate, transverse carina; first segment of flagellum slightly but distinctly longer than the second . . . . . *talus* (Cameron) (p. 602).

Median, impunctate area of last tergite terminating at a blunt, obscurely bituberculate, glabrous prominence; first and second segments of flagellum equal in length . . . . . 34.

34. Tubercles of prominence on last tergite approximate; oblique, glabrous ridges of last sternite low, not prominent; elevated, posterior margin of clypeus evenly arcuate; anterior margin of clypeus straight, not emarginate . . . . . *aerolla* (Cameron) (p. 634).

Tubercles of prominence on last tergite distinctly separated; oblique, glabrous ridges of last sternite high and prominent; elevated, posterior area of clypeus subrectangular, the postero-lateral angles prominent and reflexed; anterior margin of clypeus, broadly, angularly emarginate *bituberculata* sp. n. (p. 634).

35. Arms of Y-shaped carina on last tergite very short, not more than one-third as long as the stem . . . . . 36.

Arms of Y-shaped carina on last tergite long, more than half as long as the stem, or subequal in length to the latter . . . . . 39.

36. Scape strongly dilated and somewhat flattened distally, with only a single well-developed carina beneath . . . . . *antiqua* sp. n. (p. 639).

Scape not dilated nor flattened distally, with two parallel, equally developed carinae beneath . . . . . 37.

37. Posterior, inner angle of middle coxae with a distinct tubercle; last sternite with a pair of prominent, oblique, polished ridges on the anterior half; postero-lateral angles of elevated face of clypeus reflexed *oajaca* (Blake) (p. 641).

Posterior, inner angle of middle coxae without a tubercle; last sternite with a pair of low, polished ridges on the anterior half; posterior, elevated margin of clypeus either prominently produced medially or evenly arcuate, not at all produced laterally . . . . . 38.

38. Posterior, elevated margin of clypeus prominently produced medially *psyra* (Cameron) (p. 641).

Posterior, elevated margin of clypeus evenly arcuate . *taygete* sp. n. (p. 639).

39. Scape dilated and flattened distally, with two parallel carinae beneath but one much stronger and more developed than the other; first abdominal segment black . . . . . 40.
Scape not dilated nor flattened distally, the two parallel carinae beneath equally developed; first abdominal segment ferruginous . . . . 43.
40. Distal half of scape with a thick brush of pale, glittering hairs beneath; vertex, pronotum and mesopleura entirely black pubescent *grotei* (Blake) (p. 642).
Distal half of scape without a distinct brush of pale hairs beneath; vertex, pronotum and mesopleura pale pubescent . . . . . 41.
41. Anterior fourth to third of mesonotum evenly clothed with pale pubescence; pale pubescence of pronotum not thicker at the posterior margin; dorsum of propodeum without conspicuous, pale pubescence; propodeum densely reticulate, the reticulations small . . . . . 42.
Mesonotum almost entirely black pubescent, some pale pubescence at the parapsidal furrows anteriorly, pale pubescence of pronotum dense at posterior margin; dorsum of propodeum with conspicuous, appressed, pale pubescence; propodeum moderately reticulate *cyllene* (Cameron) (p. 643).
42. Second abdominal sternite infuscated to entirely black *suspensa* subsp. *sonora* Mickel (p. 646).
Second abdominal sternite entirely ferruginous *suspensa* subsp. *jonesi* Mickel (p. 646).
43. Posterior, inner angle of middle coxae with a distinct tooth; propodeum moderately reticulate . . . . . 44.
Posterior, inner angle of middle coxae with a large, blunt, glabrous tubercle; propodeum coarsely reticulate; posterior tarsi black *prema* (Cameron) (p. 647).
44. Middle and posterior tarsi ferruginous; sides of propodeum reticulate; median, glabrous area of clypeus depressed and concave medially *neobule* Mickel (p. 647).
Middle and posterior tarsi black; sides of propodeum with moderate, distinct, shallow punctures; median, glabrous area of clypeus transversely concave . . . . . *nitela* Mickel (p. 647).
45. Enclosed area of propodeum elevated posteriorly into a distinct tubercle; median, impunctate area of last tergite terminating in the long arms of a **Y**-shaped carina, the stem of the **Y** very short . . . . . 81.
Enclosed area of propodeum not elevated posteriorly to form a tubercle; median, impunctate area of last tergite terminating otherwise . . . 46.
46. Posterior face of last tergite with a distinct triangular depression, the median, impunctate area terminating at the dorsal angle of this depression . . . . . 47.
Posterior face of last tergite not so modified . . . . . 56.
47. Clypeus produced posteriorly into a high, median, angulate process . . 48.
Clypeus produced posteriorly, but the elevated, posterior margin arcuate . . . . . 54.
48. Abdomen entirely ferruginous . . . . . 52.
At least the last two abdominal segments infuscated or black . . . . 49.
49. Pubescence and posterior marginal fringes of abdominal tergites one to five entirely fulvous . . . . . *manga* (Cresson) (p. 603).
Pubescence of abdominal tergites one to five pale, the posterior marginal fringes mostly black . . . . . 50.
50. Median, glabrous area of clypeus triangular, longer than broad, the median, posterior angle reflexed to form a very short, acute, nasutiform tooth; dorsum and posterior face of propodeum not definitely divided by a carina . . . . . *macapa* (Cresson) (p. 604).

Median, glabrous area of clypeus triangular, as broad as long, spiniform at the median, posterior angle; dorsum and posterior face of propodeum definitely divided by a prominent, glabrous carina . . . . . 51.

51. Triangular depression of last tergite deep, the median carina extending half the distance from the posterior margin of the tergite to the dorsal angle of the depression; pubescence of tegulae pale *spiniclypeata* sp. n. (p. 604).
Triangular depression of last tergite shallow, the median carina complete from the posterior margin of the tergite to the dorsal angle of the depression; pubescence of tegulae black . . *luederwaldti* sp. n. (p. 605).

52. Median, posterior angle of glabrous area of clypeus produced into a nasutiform or spiniform process; mandibles above with a high, sharp, prominent carina extending their entire length . . . . . 53.
Median, posterior angle of glabrous area of clypeus blunt, not produced at all; mandibles above only moderately carinate, the carina low *rufiventris* (Klug) (p. 607).

53. Clypeal process short, stout, nasutiform; dorsum of propodeum clothed with thick, appressed, pale pubescence, the enclosed area with the anterior third wider than the posterior two-thirds . . . *nasica* sp. n. (p. 607).
Clypeal process long, slender, spiniform; dorsum of propodeum clothed with sparse, pale pubescence, the width of the enclosed area uniform throughout, the sides of the area parallel . . . *amazona* sp. n. (p. 608).

54. Abdomen entirely ferruginous; legs more or less ferruginous *rubripes* sp. n. (p. 615).
Terminal segments of abdomen black; legs entirely black . . . . . 55.

55. Only the first, second and anterior half to two-thirds of third abdominal segments, ferruginous; elevated posterior face of clypeus forming a half circle . . . . . *lucidiventris* (Gerstaecker) (p. 614).
First five segments of abdomen ferruginous, the fifth more or less infuscated; elevated posterior face of clypeus subspatuliform *spatuliger* sp. n. (p. 615).

56. Median, impunctate area of last tergite broadly emarginate posteriorly when viewed from above; posterior, inner angle of middle coxae with a small, distinct tooth . . . . . 57.
Median, impunctate area of last tergite not emarginate posteriorly when viewed from above; posterior, inner angle of middle coxae toothed or not 72.

57. Disk of tegulae glabrous, impunctate, the anterior and inner margins, and sometimes the posterior fourth punctate and pale pubescent . . . 62.
Tegulae punctate throughout, sparsely clothed throughout with black or pale pubescence . . . . . 58.

58. Abdomen entirely ferruginous; pubescence of tegulae pale . . . . . 61.
At least the last abdominal segment black, sometimes the first segment also black; pubescence of tegulae pale or black . . . . . 59.

59. First and last abdominal segments black, the remainder of abdomen ferruginous; pubescence of tegulae pale or black . . . . . 60.
Only the last abdominal segment black, the remainder of abdomen ferruginous; pubescence of tegulae pale . . . . . *sulcata* sp. n. (p. 582).

60. Pubescence of tegulae black; enclosed area of propodeum long and narrow, about four times as long as broad . . *terminalis* (Gerstaecker) (p. 578).
Pubescence of tegulae pale; enclosed area of propodeum broader, about three times as long as broad . . . . . *togatula* sp. n. (p. 581).

61. Middle and posterior tarsi entirely ferruginous, the anterior tarsi ferruginous in part . . . . . *lavinia* sp. n. (p. 582).
Legs including the tarsi entirely black . . . . . *merita* sp. n. (p. 583).

62. Abdomen posteriorly to the third segment entirely black, the second and third segments ferruginous . . . . . 63.
At least abdominal segments two to four inclusive, ferruginous, sometimes the abdomen entirely ferruginous . . . . . 64.

63. Clypeus produced posteriorly into a median, prominent, blunt, rounded tooth; thick pubescence of head and thorax pale *scoparia* (Gerstaecker) (p. 574).
Clypeus elevated posteriorly but not produced into a tooth, the posterior, elevated margin slightly angulate medially; thick pubescence of head and thorax golden . . . . . *gastrica* (Gerstaecker) (p. 575).
64. Proximal fifth of first flagellar segment pale yellow, the remainder of the antennae entirely black; last two abdominal segments black, sometimes the fifth somewhat infuscated . . . . . *balteata* sp. n. (p. 577).
First flagellar segment, as well as the remainder of the antennae black; either the first and last abdominal segments black, only the last abdominal segment black, or the abdomen entirely ferruginous . . . . . 65.
65. Abdomen entirely ferruginous . . . . . *tulliola* sp. n. (p. 587).
At least the last abdominal segment blackish . . . . . 66.
66. Both the first and last abdominal segments, in part or entirely, black; remainder of abdomen ferruginous . . . . . 67.
Only the last abdominal segment black or blackish . . . . . 70.
67. Second abdominal tergite closely punctate, with small, distinct punctures throughout interspersed with fine punctures, except a narrow, median, longitudinal line glabrous, impunctate . . . *punctulata* sp. n. (p. 576).
Disk of second tergite very sparsely punctate, glabrous, almost impunctate 68.
68. Dorsum of propodeum with thick, appressed, pale pubescence; northern South America and Trinidad . . . . . 69.
Dorsum of propodeum with sparse, appressed, pale pubescence; British West Indies . . . . . *rectanguloides* sp. n. (p. 585).
69. Posterior fifth of second tergite, and tergites three to six with only moderate punctures and sparse, fulvous pubescence *rectangulum* (Spinola) (p. 584).
Posterior fifth of second tergite and tergites three to six with moderate punctures closely interspersed with fine punctures, and clothed with moderately thick, somewhat appressed, fulvous pubescence *caliensis* sp. n. (p. 586).
70. Posterior fourth of second tergite, and tergites three to six with moderate punctures closely interspersed with fine punctures, and clothed with both suberect and appressed, fulvous pubescence . *baucis* sp. n. (p. 588).
Tergites two to six with moderate punctures, not interspersed with fine punctures and without appressed, fulvous pubescence . . . . . 71.
71. Entire median area of clypeus elevated, highest along the mid-longitudinal line, and with a shallow, anterior, transverse, submarginal groove *cloelia* sp. n. (p. 589).
Only the posterior third to half of median area of clypeus elevated, the anterior margin also slightly elevated, forming a deep, transverse groove between the anterior and posterior elevations . . *tinctura* sp. n. (p. 590).
72. Posterior third of last tergite perpendicularly declivous to the anterior two-thirds . . . . . 73.
Posterior third of last abdominal tergite not perpendicularly declivous to the anterior two-thirds, or only the median area posterior to the termination of the median, impunctate area perpendicular . . . . . 75.
73. Glabrous, impunctate area of clypeus convex, sloping to the sides from a median, longitudinal ridge; last tergite not elevated at termination of median, impunctate area, and the perpendicular face without elevations 74.
Glabrous, impunctate area of clypeus concave; median, impunctate area of last tergite terminating in a short, low, transverse carina; perpendicular face of last tergite with a pair of lateral, oblique carinae converging towards the posterior margin . . . . . *factiosa* sp. n. (p. 597).
74. First and last abdominal segments black . . . . *leucippe* sp. n. (p. 596).
Abdomen entirely ferruginous . . . . . *bellatula* sp. n. (p. 597).

75. Elevated portion of last tergite, when viewed from the rear, defined by a Π-shaped carina . . . . . 76.
Elevated portion of last tergite, when viewed from the rear only defined dorsally by a short, transverse or arcuate carina . . . . . 80.
76. Postero-lateral tubercles of sixth and seventh sternites prominent; lateral ridges of last sternite terminating in dentiform tubercles; last two abdominal segments entirely black . . . . . *hedone* sp. n. (p. 598).
Postero-lateral tubercles of sixth and seventh sternites weak and obscure; lateral ridges of last sternite weak, not terminating in dentiform tubercles; abdomen entirely ferruginous, or with the first and last abdominal segments in part black . . . . . 77.
77. Abdomen entirely ferruginous . . . . . 78.
Last abdominal segment black, the first segment more or less black; clypeus elevated posteriorly, the posterior, elevated margin evenly arcuate *valeria* sp. n. (p. 600).
78. Legs entirely black . . . . . 79.
Middle and posterior tarsi ferruginous . . . . *thura* (Cameron) (p. 599).
79. Posterior, elevated margin of clypeus evenly arcuate or slightly subangulate medially, and slightly reflexed medially *rufogastra* (Lepeletier) (p. 598).
Posterior margin of clypeus produced medially into a prominent, spiniform process . . . . . *oxyrae* sp. n. (p. 599).
80. Median, impunctate area of last tergite narrowed posteriorly, terminating in a very short, transverse carina; first and last abdominal segments black . . . . . *tarpeia* sp. n. (p. 601).
Median, impunctate area of last tergite not narrowed posteriorly; when viewed from the rear the impunctate area terminating in a sharp, arcuate carina; abdomen entirely ferruginous . . *buscki* sp. n. (p. 601).
81. Distal half of scape strongly dilated and flattened, very conspicuous *adrastis* sp. n. (p. 631).
Scape not dilated nor flattened distally, subterete throughout . . . . 82.
82. Sixth sternite without distinct postero-lateral tubercles; posterior, elevated face of median, glabrous area of clypeus about two-thirds as high as broad 83.
Sixth sternite with large, distinct postero-lateral tubercles; posterior, elevated face of clypeus twice as broad as high . *labdace* sp. n. (p. 630).
83. Terminal abdominal segments ferruginous . . . *connexa* (Cameron) (p. 629).
Last abdominal segment blackish . . . . . *tumidula* sp. n. (p. 630).

Key to the females.*

1. Pygidium longitudinally striate . . . . . 2.
Pygidium not longitudinally striate, sculptured otherwise . . . . . 14.
2. Scutellar scale present . . . . . 3.
Scutellar scale entirely absent . . . . . 11.
3. Head ferruginous . . . . . 4.
Head entirely black . . . . . 5.
4. Lateral margins of posterior face of propodeum strongly denticulate; legs, especially the tibiae, dark ferruginous; abdomen dusky to black above except the pale pubescent markings . . . . . *leona* (Blake) (p. 568).
Lateral margins of posterior face of propodeum slightly serrate, but not strongly denticulate; legs pale ferruginous throughout; abdomen ferruginous, except pale pubescent markings, only slightly dusky above *tyro* Mickel (p. 571).
5. Thorax very conspicuously broader posteriorly than anteriorly . . . 6.
Thorax only very slightly or not at all broader posteriorly than anteriorly 7.
6. Second abdominal tergite with a pair of longitudinal, pale pubescent stripes continuous the length of the tergite . . . . . *eris* sp. n. (p. 620).

* [*T.* (*T.*) *interstincta* sp. n. (p. 672) is not included in this key.—Editor.]

Second abdominal tergite with a pair of anterior, elongate, pale pubescent spots not extending beyond the transverse midline
harpagata sp. n. (p. 650).

7. Posterior marginal, pale pubescent band of second tergite distinctly interrupted medially with black . . . . . *fiebrigi* sp. n. (p. 619).
Posterior marginal, pale pubescent band of second tergite complete . . 8.
8. Second tergite with a pair of narrow, longitudinal, pale pubescent stripes continuous the length of the tergite; lateral margins of dorsum of thorax not noticeably emarginate medially . . . . . 9.
Second tergite with a pair of large, anterior, pale pubescent spots, sometimes connected to the broad, posterior marginal pale pubescent band by a narrow line of pale pubescence; lateral margins of dorsum of thorax distinctly emarginate medially
prominens subsp. *prominens* (Cameron) (p. 569).
9. Posterior marginal, pale pubescent band of second tergite narrow, not wider than the longitudinal, pale pubescent stripes, the anterior margin of the band straight, not sinuate . . . . *rectangulum* (Spinola) (p. 584).
Posterior marginal, pale pubescent band of second tergite distinctly broader than the pale, longitudinal stripes, its anterior margin sinuate; pale pubescent spots of tergite five contiguous posteriorly . . . . . 10.
10. Scape, pedicel, first segment of flagellum, middle and posterior tibiae, and all the tarsi, ferruginous . . . . . *caliensis* sp. n. (p. 586).
Antennae and legs, black . . . . . *rectanguloides* sp. n. (p. 585).
11. Posterior marginal, pale pubescent bands on first and second tergites complete, not at all interrupted . . . . . 12.
Posterior marginal, pale pubescent band of first tergite broadly interrupted, forming a pair of transverse, lateral spots, that of the second tergite narrowly interrupted medially or complete . . . . . 13.
12. Second tergite with a pair of narrow, longitudinal, pale pubescent stripes continuous the length of the tergite . . . . . *stimula* sp. n. (p. 585).
Second tergite with a pair of anterior, pale pubescent spots, the latter not at all connected with the posterior marginal pale pubescent band
pilatrix sp. n. (p. 651).
13. Striae of pygidium strongly diverging on the posterior half; thorax entirely ferruginous; first segment of flagellum ferruginous
pyrene sp. n. (p. 553).
Striae of pygidium straight to slightly diverging; mesopleural areas blackish; first segment of flagellum black . . *seducta* (Cresson) (p. 555).
14. Scutellar scale present . . . . . 15.
Scutellar scale entirely absent . . . . . 114.
15. Entirely black, excepting legs and antennae; abdomen with bright golden, or pale glittering pubescent markings . . . . . 16.
Not entirely black, either the head, thorax, or the abdomen ferruginous . 17.
16. Second tergite with bright golden pubescent markings, the posterior margin with a broad, complete, pubescent band . . . *ashmeadi* sp. n. (p. 564).
Second tergite with pale, glittering pubescent markings, the posterior margin with only a pair of transverse, pubescent spots
manga (Cresson) (p. 603).
17. Head entirely, or for the most part, ferruginous . . . . . 18.
Head entirely, or for the most part, black . . . . . 36.
18. Second tergite entirely without, or with indistinct, anterior, lateral, whitish or golden, glittering pubescent markings, with only a broad, posterior marginal, pale pubescent band . . . . . 19.
Second tergite with anterior, lateral, whitish or golden, appressed, glittering pubescent markings, the latter either longitudinal stripes, or subcircular spots . . . . . 20.

19. Head densely clothed with more or less appressed, ochraceous pubescence; ground colour of second abdominal segment largely ferruginous; thorax varying from almost entirely ferruginous to entirely black; anterior spots of second tergite indistinct . . . . . *senex* (Guérin) (p. 648)
    Head sparsely clothed with pale pubescence; ground colour of second abdominal segment entirely black; thorax entirely ferruginous; anterior spots of second tergite entirely absent . . . . *grotei* (Blake) (p. 642).
20. Appressed, pubescent markings of abdomen bright golden . . . . . 21.
    Appressed, pubescent markings of abdomen pale, whitish . . . . . 22.
21. Anterior, lateral, golden pubescent spots of second tergite transverse; thorax broader posteriorly than anteriorly; vertex without golden pubescent markings . . . . . *daedala* (Cameron) (p. 651).
    Anterior, lateral, golden pubescent spots of second tergite longitudinal; thorax not broader posteriorly than anteriorly; vertex with a transverse band of golden pubescence . . . . . *philyra* sp. n. (p. 652).
22. Second tergite with a pair of longitudinal, pale pubescent stripes continuous the length of the tergite . . . . . 23.
    Second tergite with anterior, lateral, pale pubescent markings, but never with continuous longitudinal stripes . . . . . 24.
23. Legs black, except all the coxae, and the anterior femora, ferruginous *suspensa* subsp. *suspensa* (Gerstaecker) (p. 646).
    Legs almost entirely ferruginous . *suspensa* subsp. *sonora* Mickel (p. 646).
24. Pale pubescent markings on anterior half of second tergite either elongate, or forming narrow, longitudinal stripes . . . . . 25.
    Pale pubescent markings on anterior half of second tergite broadly elongate ovate; scutellar scale small, inconspicuous . . . *murcia* sp. n. (p. 653).
25. Posterior marginal, pale pubescent band of second tergite complete, not at all interrupted; anterior, lateral, pale pubescent markings of second tergite in the form of either elongate spots, or narrow stripes extending from the anterior margin to the middle or slightly beyond . . . . . 26.
    Posterior marginal, pale pubescent band of second tergite not complete; second tergite with a pair of small, premedian, pale pubescent spots; posterior two-thirds of pygidium glabrous, unsculptured . . . . . 35.
26. Pygidium glabrous, mostly unsculptured . . . . . 27.
    Pygidium granulate, or rugose, or both . . . . . 28.
27. Posterior marginal, pale pubescent band of first tergite complete; longitudinal stripes on second tergite almost reaching the posterior marginal band . . . . . *continua* sp. n. (p. 593).
    Posterior marginal, pale pubescent band of first tergite reduced to a pair of small, lateral transverse spots; anterior, pale pubescent spots of second tergite scarcely extending beyond the middle of tergite *discontinua* sp. n. (p. 594).
28. Abdominal tergites three and four entirely black, without pale pubescent spots . . . . . *absentia* sp. n. (p. 653).
    Abdominal tergites three and four with lateral, pale pubescent spots . . 29.
29. Genae black; front and vertex ferruginous; anterior, lateral, longitudinal, pale pubescent stripes of second tergite extending slightly beyond the middle . . . . . *cyllene* (Cameron) (p. 643).
    Head entirely ferruginous; anterior, lateral, longitudinal, pale pubescent stripes of second tergite not extending beyond the middle . . . . 30.
30. Postero-lateral areas of pronotum clothed with dense, appressed, pale, glittering pubescence; abdomen ferruginous . . *cyra* (Cameron) (p. 571).
    Postero-lateral areas of pronotum with only sparse, erect hairs . . . 31.
31. Pygidium entirely granulate throughout . . . . . 32.
    Pygidium either longitudinally or irregularly rugose anteriorly . . . . 33.
32. Thorax slightly broader posteriorly than anteriorly . *belti* (Cameron) (p. 647).

Thorax not broader posteriorly than anteriorly . . *nicholi* Mickel (p. 647).

33. Vertex clothed throughout with dense, pale, appressed pubescence *rhanis* sp. n. (p. 654).

Vertex clothed with sparse, erect, dark ferruginous pubescence . . . 34.

34. Thorax very coarsely and deeply punctate; pygidial area distinctly granulate and somewhat longitudinally rugose anteriorly; carina of first sternite emarginate anteriorly, thus appearing as a blunt tooth *operosa* sp. n. (p. 655).

Thorax moderately, closely punctate; pygidial area irregularly rugose throughout, although granulate posteriorly between the rugosities; carina of first sternite entire, thus appearing as a straight ridge *oajaca* (Blake) (p. 641).

35. Posterior margin of second tergite with a median, rhomboidal spot, and lateral thirds, pale pubescent; integument of second tergite black; dorsum of thorax with moderate, close, confluent punctures *heterospila* (Gerstaecker) (p. 616).

Posterior margin of second tergite with only a pair of lateral, pale pubescent spots; integument of second tergite ferruginous; dorsum of thorax with large, somewhat confluent punctures *duodecimmaculata* (André) (p. 613).

36. Thorax entirely ferruginous . . . . . 55.

Thorax maculated on the sides of above with black . . . . . 37.

37. Dorsum of mesothorax maculated laterally with black . . . . . 51.

Dorsum of thorax entirely ferruginous; either the posterior face of propodeum or the meso- and metapleura maculated with black . . . . 38.

38. Posterior face of propodeum with a median, longitudinal stripe, or blotch of black; meso- and metapleura usually entirely ferruginous but sometimes maculated with black . . . . . 39.

Posterior face of propodeum entirely ferruginous, the meso- and metapleura black . . . . . 46.

39. Dorsum of thorax broader posteriorly than anteriorly; pygidium delicately, indistinctly granulate and rugose; meso- and metapleura sometimes blackish . . . . . 40.

Dorsum of thorax not broader posteriorly than anteriorly; pygidium either distinctly granulate, rugose, or mostly glabrous, unsculptured; meso- and metapleura ferruginous . . . . . 44.

40. Legs ferruginous . . . . . 41.

Legs black . . . . . 43.

41. Meso- and metapleura marked extensively with black . . . . . 42.

Meso- and metapleura entirely ferruginous . . . *vacuna* sp. n. (p. 657).

42. Only the tips of the femora blackish; last abdominal segment dark ferruginous or black; pubescence of abdomen other than pale pubescent markings, conspicuously copper-coloured in certain lights *subrobusta* (Cameron) (p. 657).

Distal third (externally) to half (internally) of femora blackish; last abdominal segment pale ferruginous; pubescence of abdomen other than pale, pubescent markings, velvety-black . . *clonia* (Cameron) (p. 657).

43. Ventral third of meso- and metapleura black; sides of propodeum entirely ferruginous; posterior marginal, pale pubescent band of second tergite distinctly dilated medially; mesonotal-scutellar suture indistinct *selene* sp. n. (p. 655).

Meso- and metapleura, and anterior half of sides of propodeum entirely black; posterior marginal, pale pubescent band of second tergite not dilated medially; mesonotal-scutellar suture distinct . *brancoensis* sp. n. (p. 623).

44. Posterior marginal, pale pubescent bands of first and second tergites complete, not at all interrupted; pygidium either distinctly granulate or rugose; legs ferruginous . . . . . 45.

Posterior marginal, pale pubescent band of first and second tergites interrupted both medially and laterally; thus each tergite with a pair of pale pubescent spots at the posterior margin; pygidium mostly glabrous, unsculptured; legs blackish; posterior face of propodeum with a posterior, median, blackish blotch . . . . *yungasae* sp. n. (p. 610).

45. Posterior marginal, pale pubescent band of second tergite not dilated medially, only dilated laterally in line with the anterior pale pubescent spots; vertex without pale pubescent markings *impudica* (Cameron) (p. 658).

Posterior marginal, pale pubescent band of second tergite angulately dilated medially as well as dilated laterally in line with the anterior, pale pubescent spots; vertex with a pair of subtriangular spots of pale, appressed pubescence . . . . . *lilea* (Cameron) (p. 658).

46. Thorax broader posteriorly than anteriorly; pygidium unsculptured, glabrous on posterior half . . . . . 47.

Thorax not broader posteriorly than anteriorly; pygidium sculptured on posterior half or not . . . . . 49.

47. Pale, pubescent stripes on second tergite continuous from the anterior to the posterior margins . . . . . 48.

Pale pubescent spots on second tergite extending from the anterior margin only to the transverse midline . . . . . *wheeleri* sp. n. (p. 664).

48. Posterior marginal, pale pubescent band of second tergite complete *eriphyla* sp. n. (p. 591).

Posterior marginal, pale pubescent band of second tergite obsolete between the lateral, pale pubescent stripes . . . . . *alcimede* sp. n. (p. 612).

49. Lateral, pale pubescent stripes on second tergite continuous, or almost continuous, from the anterior to the posterior margin *mediata* (Fabricius) (p. 560).

Lateral, pale pubescent stripes on second tergite not extending posterior to the transverse midline . . . . . 50.

50. Lateral, pale pubescent stripes on second tergite narrow, not wider anteriorly than posteriorly; pygidium longitudinally rugose anteriorly, granulate posteriorly . . . . . *boliviana* sp. n. (p. 627).

Lateral, pale pubescent stripes on second tergite cuneiform, broader anteriorly than posteriorly; pygidium irregularly rugose throughout *sieberi* sp. n. (p. 626).

51. Lateral, pale pubescent stripes of second tergite continuous or almost continuous from the anterior to the posterior margins; legs black . . . 52.

Lateral, pale pubescent stripes of second tergite extending only slightly posterior to the transverse midline; legs ferruginous . . . . . 54.

52. Posterior marginal, pale pubescent band of second tergite complete . . 53.

Posterior margin of second tergite black, without a pale pubescent band *bitaeniata* (Spinola) (p. 595).

53. Posterior face of propodeum entirely ferruginous; lateral, black spots on mesonotum elongate, about twice as long as broad *mediata* var. *pexsa* var. n. (p. 563).

Posterior face of propodeum with a distinct, median, black spot; lateral, black spots on mesonotum broad, almost as broad as long *punctata* (du Buysson) (p. 595).

54. Posterior marginal, pale pubescent band of first tergite complete; anterior half of sides of propodeum sparsely punctured, the posterior half with large, close punctures; second sternite with moderate, distinct punctures; tips of femora infuscated . . . . . *colombiana* sp. n. (p. 666).

Posterior marginal, pale pubescent band of first tergite narrowly interrupted; only anterior third of sides of propodeum punctured, the posterior two-thirds with large, close and more or less confluent punctures; second sternite with large, distinct punctures; legs entirely ferruginous, the tips of femora not infuscated . . . . . *trimaculosa* sp. n. (p. 665).

55. Posterior marginal, pale pubescent band of both the first and second tergites complete . . . . . 56.
Posterior marginal, pale pubescent band of the first or second tergites, or both, either entirely absent or, if present, interrupted either medially or laterally . . . . . 98.
56. Legs entirely or in part ferruginous . . . . . 57.
Legs entirely very dark mahogany red or black . . . . . 68.
57. Lateral, pale pubescent markings on second tergite whitish and linear . 58.
Lateral, pale pubescent markings on second tergite golden, and subcircular or ovate . . . . . *aureata* sp. n. (p. 651).
58. Lateral, pale pubescent markings on second tergite continuous from the anterior to the posterior margins . . . . . 59.
Lateral, pale pubescent markings on second tergite confined to the anterior half to two-thirds . . . . . 60.
59. Thorax distinctly broader posteriorly than anteriorly *runata* sp. n. (p. 592).
Thorax not broader posteriorly than anteriorly *ruficornis* sp. n. (p. 594).
60. Thorax slightly but distinctly broader posteriorly than anteriorly . . . 64.
Thorax not at all broader posteriorly than anteriorly . . . . . 61.
61. Mesonotal area distinctly constricted; antennal tubercles black . . . 62.
Mesonotal area not at all or only very slightly constricted; antennal tubercles ferruginous . . . . . 63.
62. Vertex mostly black pubescent; legs black, except the intermediate and posterior femora beneath ferruginous . . . *hoegei* (Cameron) (p. 644).
Vertex with a pair of subtriangular, pale pubescent spots; legs ferruginous except the black tips of the femora . . . *delecta* sp. n. (p. 661).
63. Lateral, pale pubescent spots of second tergite elongate ovate; lateral, pale pubescent spots on fifth tergite confluent medially at the posterior margin of the tergite; pygidium weakly granulate posteriorly *lilea* (Cameron) (p. 658).
Lateral, pale pubescent spots of second tergite narrow, linear; lateral, pale pubescent spots on fifth tergite widely separated, not confluent medially at the posterior margin of the tergite; pygidium posteriorly finely rugose *centroamericana* (Dalle Torre) (p. 665).
64. Lateral, pale pubescent spots on tergites three to five transverse, extending to the lateral margins of the respective tergites . . . . . 65.
Lateral, pale pubescent spots on tergites three to five linear or quadrate, not extending to the lateral margins of the respective tergites . . . . 66.
65. Vertex with a pair of distinct, subtriangular, pale pubescent spots *suffusa* sp. n. (p. 661).
Vertex without distinct, pale pubescent spots . . . *damalis* sp. n. (p. 660).
66. Posterior half of pygidium distinctly granulate . . *obscurella* sp. n. (p. 645).
Posterior portion of pygidium either finely rugose, weakly granulate, or glabrous, unsculptured . . . . . 67.
67. Vertex with a pair of subtriangular, appressed, pale pubescent spots; posterior portion of pygidium weakly granulate . *segesta* sp. n. (p. 659).
Vertex without appressed, pale pubescent spots; posterior portion of pygidium finely rugose . . . . . *collina* sp. n. (p. 659).
68. Lateral, pale pubescent stripes of second tergite continuous from the anterior to the posterior margins . . . . . 69.
Lateral, pale pubescent markings of second tergite not continuous from the anterior to the posterior margins . . . . . 80.
69. Thorax slightly but distinctly narrower posteriorly than anteriorly . . 70.
Thorax not at all narrowed posteriorly . . . . . 71.
70. Vertex clothed mostly with pale, appressed pubescence *mulfordi* sp. n. (p. 617).
Vertex for the most part black pubescent . . . . *daucia* sp. n. (p. 618).
71. Pygidium granulate throughout . . . . . 72.

At least the anterior portion of pygidium rugose . . . . . 74.

72. Lateral, pale pubescent spots on tergites three to five extending to the lateral margins of the respective tergites . . . *chrysea* sp. n. (p. 671).
Lateral, pale pubescent spots of tergites three to five as long or longer than broad, not extending laterally to the margins of the tergites . . . 73.

73. Sides of propodeum with distinct, sparse punctures throughout *manni* sp. n. (p. 618).
Sides of propodeum glabrous, mostly impunctate, except the posterior third with close, confluent punctures . . . *disgrega* sp. n. (p. 649).

74. Sides of propodeum with large, close punctures . . *nisa* sp. n. (p. 592).
Sides of propodeum sparsely punctate, with only sparse, small punctures . 75.

75. Vertex with a pair of lateral, triangular spots of appressed, pale pubescence 76.
Vertex with only sparse, dark hairs . . . . . *livilla* sp. n. (p. 580).

76. Pubescent markings of head and abdomen golden; golden pubescent spots of third tergite quadrate . . . . . *phalerata* (Klug) (p. 590).
Pubescent markings of head and abdomen pale, whitish . . . . . 77.

77. Anterior half to two-thirds of pygidial area longitudinally rugose . . . 78.
Anterior two-thirds of pygidial area irregularly rugose; lateral pale pubescent spots of third tergite rectangular . *punctulata* sp. n. (p. 576).

78. Lateral, pale pubescent spots of third tergite triangular *odice* sp. n. (p. 578).
Lateral, pale pubescent spots of third tergite linear, rectangular . . . 79.

79. Abdomen black; second tergite with moderate punctures visible through the pubescence . . . . . *hercyna* sp. n. (p. 579).
Abdomen ferruginous; second tergite strongly punctured, with moderately large, distinct punctures visible through the sparse pubescence *dapsilis* sp. n. (p. 580).

80. Lateral, pale pubescent spots on tergites three to five transverse, extending to the lateral margins of the respective tergites . . . . . 81.
Lateral, pale pubescent spots on tergites three to five linear, not extending to the lateral margins of the respective tergites . . . . . 85.

81. Lateral, pale pubescent markings on second tergite linear; sides of propodeum with large, close punctures; posterior marginal, pale pubescent band of second tergite with the anterior margin almost straight *gerstaeckeri* sp. n. (p. 667).
Lateral, pale pubescent markings of second tergite broader, either ovate or triangular; sides of propodeum with large, confluent punctures posteriorly, or with scattered, small punctures; posterior marginal, pale pubescent band of second tergite with the anterior margin distinctly sinuate . . . . . 82.

82. Lateral margins of dorsum of thorax strongly crenulate; posterior marginal, pale pubescent band of second tergite not produced anteriorly towards the lateral, pale pubescent spots; pale pubescent spots on tergite five widely separated . . . . . 83.
Lateral margins of dorsum of thorax not crenulate; posterior marginal, pale pubescent band of second

83. Thorax slightly broader posteriorly than anteriorly; lateral margins of dorsum of thorax scarcely emarginate at the mesonotal area . . . 84.
Thorax not broader posteriorly than anteriorly; lateral margins of dorsum of thorax distinctly emarginate at the mesonontal area *derelicta* (Smith) (p. 667).

84. Sides of propodeum with sparse, moderately small punctures throughout; pygidium irregularly rugose anteriorly; anterior margin of posterior marginal, pale pubescent band on second tergite sinuate; anterior pubescent spots on second tergite triangular *ferocula* sp. n. (p. 670).
Sides of propodeum with large, coarse, deep punctures on the posterior half; pygidium longitudinally rugose anteriorly; anterior margin of

posterior marginal, pale pubescent band on second tergite straight; anterior pubescent spots on second tergite quadrate . *trifolia* sp. n. (p. 670).

85. Thorax distinctly broader posteriorly than anteriorly . . . . . 93.
Thorax not at all broader posteriorly than anteriorly. . . . . 86.

86. Thorax slightly but distinctly narrower posteriorly than anteriorly *zonata* (Spinola) (p. 625).
Thorax equal in width posteriorly and anteriorly . . . . . 87.

87. Anterior, pale pubescent markings of second tergite fairly broad, sublinear . . . . . 88.
Anterior, pale pubescent markings of second tergite very narrow, strongly linear . . . . . 91.

88. Pale pubescent spots on tergites three to five quadrate, as broad as long *lineoloides* sp. n. (p. 624).
Pale pubescent spots on tergites three to five rectangular, elongate, longer than broad . . . . . 89.

89. At least the anterior half of pygidium longitudinally rugose . . . . 90.
Pygidium almost entirely irregularly rugose . . . *saundersi* sp. n. (p. 627).

90. At least anterior half of sides of propodeum sparsely punctate; pale pubescent spots on tergite five connected medially along the posterior margin . . . . . *direpta* sp. n. (p. 662).
Sides of propodeum with moderately large, distinct, close punctures throughout; pale pubescent spots on tergite five widely separated *herse* sp. n. (p. 625).

91. Pale pubescent spots of fifth tergite connected posteriorly along the posterior margin of the tergite by a line of pale pubescence . . . . 92.
Pale pubescent spots of fifth tergite widely separated *inca* sp. n. (p. 628).

92. Antennal tubercles ferruginous; posterior marginal, pale pubescent band of second tergite with its anterior margin strongly, angulately dilated medially . . . . . *guadeloupensis* Mickel (p. 667).
Antennal tubercles black; posterior marginal, pale pubescent band of second tergite broad, not strongly dilated medially, the anterior margin only very slightly sinuate . . . . . *dominica* sp. n. (p. 666).

93. Pale pubescent spots on tergite five distinctly or widely separated, not confluent medially . . . . . 94.
Pale pubescent spots on tergite five united medially along the posterior margin of the tergite . . . . . 95.

94. Sides of propodeum with large, close punctures throughout *raui* sp. n. (p. 656).
Sides of propodeum with small, scattered punctures *porcata* (Cameron) (p. 656).

95. Pale pubescent spots on tergite three elongate, rectangular, longer than broad . . . . . 96.
Pale pubescent spots on tergite three quadrate, as broad as long, or subtriangular, broader than long . . . . . 97.

96. Lateral margins of dorsum of thorax very distinctly emarginate at the meso- and metapleural areas; anterior three-fifths of sides of propodeum with sparse, moderate, distinct punctures, the posterior two-fifths coarsely, confluently punctate . . . . *incensita* sp. n. (p. 663).
Lateral margins of dorsum of thorax scarcely emarginate at the meso- and metapleural areas; sides of propodeum with small, sparse punctures, only the posterior margin coarsely, confluently punctate *phiala* sp. n. (p. 663).

97. Pale pubescent spots of third tergite quadrate, as broad as long; anterior half of sides of propodeum with moderate, sparse punctures, the posterior half coarsely, confluently punctate; head entirely black *diversita* sp. n. (p. 629).

Pale pubescent spots of third tergite subtriangular, broader than long; sides of propodeum with moderate, distinct punctures anteriorly, becoming close and confluent posteriorly; head with an obscure ferruginous spot on the front . . . . . *obscurella* sp. n. (p. 645).

98. Pygidium strongly granulate . . . . . *manni* sp. n. (p. 618).
Pygidium rugose, or glabrous, or both . . . . . 99.

99. Second tergite with a complete, or almost complete posterior marginal, pale pubescent band, sometimes the band narrowly interrupted medially . . . . . 100.
Second tergite without a posterior marginal, pale pubescent band, the posterior margin maculated only by the tips of the longitudinal, pale pubescent stripes, or by a pair of pale pubescent spots . . . . 104.

100. Lateral, pale pubescent stripes of second tergite continuous from the anterior to the posterior margins, or sometimes weakly interrupted just anterior to the posterior marginal, pale pubescent band . . . . 101.
Lateral, pale pubescent stripes reduced to anterior linear spots, widely separated posteriorly from the posterior marginal, pale pubescent band . . . . . 102.

101. Lateral, pale pubescent stripes of second tergite very broad, not at all interrupted posteriorly; posterior marginal, pale pubescent band very broad, narrowly interrupted medially with black *adornata* sp. n. (p. 622).
Lateral, pale pubescent stripes of second tergite narrow, linear, either continuous or weakly interrupted posteriorly; posterior marginal, pale pubescent band narrow, interrupted medially or not *scoparia* (Gerstaecker) (p. 574).

102. Posterior marginal, pale pubescent band of second tergite not at all interrupted medially; anterior, pale pubescent stripes extending beyond the transverse midline . . . . . 103.
Posterior marginal, pale pubescent band of second tergite narrowly but distinctly interrupted medially with black; anterior, pale pubescent stripes not extending beyond the transverse midline *intermissa* sp. n. (p. 606).

103. Vertex with a pair of appressed, pale pubescent spots *scoparia* (Gerstaecker) (p. 574).
Vertex without a pair of appressed, pale pubescent spots *candace* sp. n. (p. 622).

104. Second tergite with a pair of longitudinal, pale pubescent stripes continuous or almost continuous from the anterior to the posterior margin, the latter maculated only by the tips of the longitudinal stripes . 105.
Second tergite with only a pair of anterior, linear, pale pubescent spots, and a pair of pale pubescent spots at the posterior margin . . . 109.

105. Pygidium longitudinally rugose, the rugae extending almost to the posterior margin; legs black . . . . . *strigata* sp. n. (p. 621).
At least the posterior half of the pygidium glabrous, unsculptured; legs black or ferruginous . . . . . 106.

106. Thorax slightly narrower posteriorly than anteriorly; pygidium entirely glabrous; lateral, pale pubescent stripes constricted and almost interrupted posteriorly, then broadly dilated, the stripes thus resembling a pair of exclamation marks *exclamationis* (Cresson) (p. 612).
Thorax equal in width posteriorly and anteriorly; anterior half of pygidium more or less longitudinally rugose, occasionally entirely glabrous; lateral, pale pubescent stripes of second tergite more or less dilated at the posterior margin but not constricted posteriorly . 107.

107. Legs entirely pale ferruginous like the thorax; flagellum mostly ferruginous; anterior half of pygidium distinctly longitudinally rugose *bilineatella* sp. n. (p. 614).

Legs dark ferruginous to black, much darker than the thorax; flagellum mostly blackish . . . . . 108.

108. Space between the lateral, pale pubescent stripes on the posterior margin of second tergite less than the greatest width of the dilated stripe; sides of propodeum with moderately small punctures, the latter distinct though close at the posterior margin; anterior half of pygidium distinctly longitudinally rugose . . . . . *intercisa* sp. n. (p. 613).

Space between the lateral, pale pubescent stripes on the posterior margin of second tergite much greater than the greatest width of the dilated stripes; sides of propodeum with moderately large, confluent punctures posteriorly; pygidium usually glabrous, sometimes the anterior half more or less irregularly rugose . . . . . *pictoria* sp. n. (p. 620).

109. Distance between pale pubescent spots at posterior margin of second tergite as great or slightly greater than the transverse diameter of one of the spots . . . . . *spiniclypeata* sp. n. (p. 604).

Distance between pale pubescent spots at posterior margin of second tergite much less than the transverse diameter of one of the spots . 110.

110. Legs ferruginous . . . . . 113.

Legs piceous to black . . . . . 111.

111. Anterior, pale pubescent stripes of second tergite not extending posterior to the middle of the tergite . . . . . 112.

Anterior, pale pubescent stripes of second tergite extending distinctly beyond the middle of the tergite . . . . . *steinbachi* sp. n. (p. 610).

112. Posterior marginal, pale pubescent band of first tergite complete *bilineipunctata* (Spinola) (p. 609).

Posterior marginal, pale pubescent band of first tergite distinctly interrupted medially . . . . . *atriceps* (Smith) (p. 609).

113. Anterior, pale markings of second tergite broad, elongate spots, extending slightly beyond the middle of the tergite . . . *galatea* sp. n. (p. 611).

Anterior, pale markings of second tergite narrow lines extending well beyond the middle of the tergite and approaching the posterior marginal spots . . . . . *perexilis* sp. n. (p. 612).

114. Thorax distinctly broader posteriorly than anteriorly . . . . . 115.

Thorax not at all broader posteriorly than anteriorly, sometimes narrower posteriorly than anteriorly . . . . . 116.

115. Entirely black, the vertex and posterior half of front densely clothed with appressed, pale golden pubescence . . . *gaumeri* (Cameron) (p. 672).

Head and thorax entirely ferruginous; lateral margins of posterior face of propodeum produced anteriorly into a prominent, blunt tooth *falsa* (Dalle Torre) (p. 668).

116. Head entirely ferruginous . . . . . 117.

Head entirely black. . . . . 121.

117. Second tergite without anterior, pale pubescent spots; tergites three to five each with a posterior marginal, pale pubescent band *contigua* Mickel (p. 673).

Second tergite with a pair of anterior, pale pubescent spots; tergites three to five each with a pair of lateral, pale pubescent spots . . . 118.

118. Mesonotal area of thorax constricted, thus the lateral margins of dorsum of thorax emarginate medially . . . . . 119.

Mesonotal area of thorax not at all constricted, the lateral margins of dorsum of thorax straight and more or less converging posteriorly . 120.

119. Posterior face of propodeum perpendicular to the dorsum and both asperate; posterior margin of genae not carinate; thorax equal in width anteriorly and posteriorly . . . . *asperata* sp. n. (p. 668).

Posterior face of propodeum rounded into the dorsum and both longitudinally rugoso-punctate; posterior margin of genae subcarinate; thorax narrower posteriorly than anteriorly . *mexicana* (Cameron) (p. 638).

120. Thorax very slightly narrowed posteriorly, the sides of the dorsum subparallel; abdomen largely ferruginous to dark ferruginous; legs entirely bright ferruginous . *navasota* subsp. *navasota* (Bradley) (p. 638).
Thorax strongly narrowed posteriorly, the sides of the dorsum distinctly converging posteriorly; abdomen mostly black; at least the tibiae and tarsi black . . . . . *navasota* subsp. *nebulosa* Mickel (p. 638).
121. Legs entirely ferruginous; lateral, pale pubescent markings of second tergite broad, elongate ovate; posterior marginal, pale pubescent band of second tergite broad, its anterior margin sinuate *ruida* sp. n. (p. 669).
Legs entirely black; lateral, pale pubescent markings of second tergite narrow, linear; posterior marginal, pale pubescent band of second tergite narrow, its anterior margin straight . *flavofasciata* (André) (p. 567).

Timulla (Timulla) pyrene sp. n.

Pl. 1, fig. 1, ♀; Pl. 6, fig. 100, ♂.

Male. Head, thorax, legs, first and last abdominal segments, all black, except the posterior margin of the first tergite ferruginous like the remainder of the abdominal segments; proximal sixth of first segment of flagellum yellowish; head, thorax, legs and first abdominal segment clothed with sparse, pale pubescence except the mesonotum and anterior, median area of scutellum with sparse, black pubescence, and the vertex with sparse, dark hairs, the front, occipital area, genae, posterior margin of pronotum and dorsum of propodeum with the pale pubescence thick; ferruginous area of abdomen clothed with sparse, fulvous pubescence; mandibles distinctly excised beneath; median, glabrous area of clypeus elevated posteriorly, the elevated margin evenly arcuate; scape very obscurely bicarinate beneath; antennal scrobes carinate above; ocelli small, the distance between the eye margins and the lateral ocelli equal to five times the diameter of the latter; parapsidal furrows distinct and complete from anterior to posterior margins of mesonotum; scutellum gibbose; enclosed space of propodeum long, the sides slightly converging towards the rear, not elevated posteriorly to form a tubercle; tegulae glabrous, unsculptured, except the anterior and inner margins punctate and black pubescent; narrow, elongate, median area on second tergite glabrous and impunctate, the lateral discal areas with moderate, well-separated punctures becoming close at the sides and interspersed toward the longitudinal midline with small punctures; the depressed, marginal area of second tergite with moderately small, distinct punctures; median, impunctate area of last tergite terminating posteriorly at a transverse, arcuate carina, the impunctate area therefore broad posteriorly, with its posterior margin broadly, shallowly emarginate; last tergite beyond the carina declivous, concave, glabrous and with a median, longitudinal carina; posterior margin of last tergite distinctly emarginate medially; postero-lateral tubercles on sixth and seventh sternites distinct; last sternite with a pair of lateral ridges on the anterior half, the ridges elevated and dentiform posteriorly; intermediate coxae not toothed within; calcaria pale; wings fuscous except the proximal half almost hyaline; cell 2nd $R_1 + R_2$ subtruncate distally; cell R_5 receiving vein M_{3+4} slightly beyond the middle; cell R_4 present but less distinct than R_5 and receiving vein M_2 at three-fifths the distance from base to apex; vein m-cu distinctly anterior to vein $M_4 + Cu_1$ on vein Cu. Length, 17 mm.

Female. Head, abdomen and legs, black, except the antennal tubercles, distal fourth of scape, pedicel entirely and first segment of flagellum entirely, ferruginous; thorax entirely ferruginous; clypeal and genal areas of head with sparse, erect, pale hairs, the front and vertex with sparse, erect and recumbent, black hairs, except the vertex with a pair of lateral, subtriangular, pale pubescent spots adjacent to the eyes; thorax clothed

with sparse, pale pubescence except the dorsum with sparse, erect and recumbent, fusco-ferruginous hairs; abdomen beneath clothed with sparse, pale pubescence, thicker at the posterior margin of the sternites; abdominal tergites clothed for the most part with black pubescence, the pale pubescent markings as follows: a posterior marginal band on the first tergite broadly interrupted medially; second tergite with a pair of longitudinal stripes extending from the anterior to the posterior margins and a complete posterior marginal band; tergites three to five each with a pair of elongate, rectangular spots; antennal scrobes distinctly carinate above; thorax not broader posteriorly than anteriorly; lateral margins of dorsum of thorax broadly, shallowly emarginate at the mesonotal area; dorsum of thorax strongly, longitudinally rugoso-punctate posterior to the pronotal area; scutellar scale practically obsolete; sides of propodeum with small, sparse punctures; second tergite with moderate punctures closely interspersed with fine punctures; pygidial area large, longitudinally striate, the striae on the posterior half strongly diverging from the midline; first sternite with a short, median, longitudinal carina anteriorly, the carina elevated posteriorly thus resembling a tubercle; second sternite with moderate, sparse punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 10 mm.

Holotype and Allotype. ♂ and ♀ respectively (taken *in copula*), Argentine Republic: Huerta Grande, Sierra Grande, Sierra de Cordoba, i.1910 (*Jos. Hubrich*), in collection of University of Minnesota.

Paratypes. 4 ♂♂ and 1 ♀, Argentine Republic: Granja, Sierra Chica, near Alta Gracia, Sierras de Cordoba, 10.i.1920, 14, 15, 21.i.1921 and 2.ii.1919 (*Jos. Hubrich*); ♂, Alta Gracia, Cordoba, 20.ii.1922 (*Carlos Bruch*); 2 ♂♂, ♀, Cordoba (*W. M. Davis*); 2 ♀♀, Cordoba (*Reimoser*); 2 ♂♂, Cordova (*Davis*); ♀, Cordoba, ♂, Rosas, F.C. Sud, Provincia de Buenos Aires (*Juan B. Daguerre*); 7 ♂♂, 2 ♀♀, Estancia la Noria, Rio San Javier, Santa Fé, 15 and 21.xii.1911, and 2, 4, 7, and 9.i.1912 (*G. E. Bryant*); ♀, Banderas, 55 kil. au n. d'Icano, Chaco de Santiago del Estero (*E. R. Wagner*), 1910; ♂, Tucuman, 6.i.1917; ♀, Tucuman, 12.iii.1917; ♂, Tucuman, 25.iii.1930 (*H. A. Jaynes*); ♂, Provincia de Salta (1200 m.); ♂, S. Juancito, Jujuy, 28.ii.1920 (Cornell Univ. Exped.); ♂, Bolivia: Santa Cruz de la Sierra, 450 m. (*J. Steinbach*); ♀, Cambeiti, 15.v.1923 (*G. L. Herrington*); ♀, Paraguay: San Bernardino, 15.ii. (*K. Fiebrig*); ♂, San Bernardino (*K. Fiebrig*); 2 ♂♂ and 1 ♀, San Luis (*Reimoser*); ♂, Brazil: Chapada, October; ♂, Jatahy, Goyaz, ix.–xi. 1897; ♀, Goyaz, 2 ♂♂ and 1 ♀, Rio Grande do Sul; ♂, Brazil (*Natterer*).

The male of this species may be easily identified by the emarginate posterior margin of the last tergite, the emarginate posterior margin of the median, impunctate area of the last tergite, and the yellow colour of the pedicel and proximal part of the first flagellar segment; it is clearly related to the group of species with the emarginate, posterior margin of the last tergite but differs from all of them in the conformation of the surface of the last tergite. The female is closely related to *seducta* Cresson, the male of which is unknown. The most significant structural characters of the female are the striated pygidium with the striae diverging on the distal half, the absent or almost obsolete scutellar scale, and the longitudinally rugoso–punctate dorsum of thorax; in *seducta* the striae of the pygidium are straight, not diverging on the posterior half.

The holotype and allotype specimens were selected as such because they were taken *in copula*. The holotype differs from all the other male paratypes in having the moderate punctures of the second tergite interspersed with small punctures; in the paratypes only the moderate punctures are present, the second tergite in them having the appearance of being more sparsely pubescent than

the holotype. Since all the paratypes from the same general locality are in other respects like the holotype, I think there can be no doubt they are the same species. One male from Cordoba, Argentina, and one from San Bernardino, Paraguay, differ from the other males in having the first abdominal segment ferruginous. All the Brazil specimens show a tendency towards darkening of the third, fourth, fifth and sixth abdominal segments, although only one specimen has all of these segments almost entirely black. The females show some variation with respect to the pale pubescent pattern of the second tergite. Most of the female paratypes have the posterior marginal pale pubescent band complete and the pair of longitudinal pale stripes complete; a specimen from Tucuman, Argentina Republic, one from Cambeiti, Bolivia, and one from Goyaz, Brazil, have the posterior marginal band broadly interrupted medially and laterally, and the longitudinal stripes also broadly interrupted posteriorly so that the posterior marginal band is reduced to a pair of pale lateral spots, and the longitudinal stripes to pale anterior spots. One female specimen from Cordoba and another from San Luis, Paraguay, have the posterior marginal band of the second tergite very narrowly interrupted medially but the longitudinal stripes are complete. Finally, one female specimen from Rio Grande do Sul, Brazil, has the posterior marginal band complete but the longitudinal stripes interrupted posteriorly. Further collecting of both males and females, and a study of the biology of this species may indicate the desirability of breaking up this complex into subspecies or varieties, but the material before me does not seem to justify any other conception than that it represents a single species with the above described variations. The males before me vary in length from 10 to 17 mm., the females from 8 to 11·5 mm.

Timulla (*Timulla*) *seducta* (Cresson). (New combination.)

Pl. 1, fig. 2, ♀.

Mutilla seducta Cresson, 1902, *Trans. Amer. ent. Soc.* **28** : 16, female.
Mutilla seducta André, 1903, *Gen. Ins.* **11** : 42, n. 58, female.

The following description has been drawn from the type specimen :

Female. Head, abdomen and legs, black, except the proximal two-thirds of mandibles, antennal tubercles and tip of scape, ferruginous; thorax ferruginous, except the pleural areas, pronotum, lateral portions of mesonotum and posterior face of propodeum suffused with black; head clothed with sparse, erect and recumbent, pale pubescence, except the front with fuscous pubescence, and the vertex with a pair of subtriangular spots of thick, appressed, pale pubescence; thorax clothed with sparse, pale pubescence except the dorsum with dark pubescence; abdomen beneath clothed with sparse, pale pubescence, thicker at the posterior margin of the sternites; abdominal tergites clothed for the most part with black pubescence, the pale pubescent markings as follows : first tergite with a posterior marginal band broadly interrupted medially; second tergite with a pair of anterior, lateral stripes extending from the anterior margin towards the posterior marginal band but narrowed and subinterrupted before reaching it, the posterior marginal band narrowly interrupted medially and dilated laterally towards the lateral stripes; tergites three to five each with a pair of elongate, rectangular spots, those on tergite five widely separated; antennal scrobes distinctly carinate above; thorax not broader posteriorly than anteriorly; sides of dorsum of thorax parallel, the mesothoracic area only slightly constricted; scutellar scale absent; lateral margins of posterior face of propodeum denticulate; sides of propodeum with fine, scattered punctures anteriorly, larger and closer punctures posteriorly; second tergite with large punctures visible through the pubescence and closely interspersed

with fine punctures; pygidial area distinctly, longitudinally striate, the striae straight and only slightly diverging; first sternite with a prominent, short, median, longitudinal carina anteriorly; second sternite with moderate, scattered punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 10 mm.

Type. ♀, Brazil: Chapada, Matto Grosso, in Carnegie Museum, Pittsburg, Pa.

Specimens examined. ♀, Brazil: Chapada, June; ♀, Rio Verde, Goyaz; 10 ♀♀, Goyaz; ♀, Argentine Republic: Provincia de Salta (1200 m.); ♀, Las Garzas, Bords du Rio las Garzas, 25 kil. à l'o. d'Ocampa, Chaco de Santa Fé (*Wagner*), 1903.

Related to *pyrene* but differs in having the striae of the pygidium straight and only slightly diverging, in the black first flagellar segment, and the infuscation of the pleural areas. None of the specimens examined has the thorax as extensively black as the type. All except the specimen from Salta, Argentine Republic, have the mesopleural area black but the latter has the thorax entirely ferruginous. Many of the specimens have the black on the pleural areas extended beyond the mesopleura but none has it extending on to the dorsum of the thorax. Most of the specimens have the posterior median area of the posterior face of propodeum suffused with black. One of the specimens from Goyaz, Brazil, was compared with the type.

Timulla (Timulla) spoliatrix sp. n.

Pl. 6, fig. 101, ♂.

Male. Head, thorax and legs black, except the mandibles ferruginous medially, and the pedicel and proximal fourth of the first flagellar segment yellowish; abdomen entirely ferruginous; head, thorax and legs clothed with sparse, pale pubescence, except the mesonotum and anterior portion of scutellum with sparse, recumbent, black pubescence, and the lateral areas of clypeus, front, genae, pronotum, dorsum of propodeum and mesopleura with the pale pubescence thick; abdomen beneath clothed with sparse, pale pubescence, the tergites with sparse, fulvous pubescence; mandibles deeply excised beneath; posterior, elevated margin of glabrous clypeal area, subarcuate, that is, with a very slight angle medially, and slightly angulate on each side about three-fifths the distance from the midline to the anterior margin; scape distinctly bicarinate beneath; antennal scrobes carinate above; ocelli small, the distance between the eye margins and the lateral ocelli about four times the greatest diameter of the latter; parapsidal furrows complete from anterior to posterior margins of mesonotum; scutellum gibbose; enclosed area of propodeum distinct, angulate posteriorly, the sides parallel, not elevated posteriorly into a tubercle; tegulae glabrous, finely punctate at the anterior margin and on the inner half, the punctate areas with sparse, pale pubescence; second tergite glabrous, almost impunctate on the disk, the latter with a few scattered punctures and the lateral areas with moderately small, close, distinct punctures; median, impunctate area of last tergite terminating at the junction of the dorsal and posterior faces of the tergite, without any carina or other sculpturing separating the two faces, the median area of the posterior face slightly concave and with a median, longitudinal carina; posterior margin of last tergite strongly emarginate medially; first sternite with a median, longitudinal carina on the anterior half, the carina distinctly elevated posteriorly; second sternite with moderate, sparse, distinct punctures; sternites six and seven with a pair of tubercles at the postero-lateral angles; last sternite with a pair of extreme lateral, longitudinal ridges on the anterior half, the posterior portion of the ridges elevated into strong, conspicuous teeth; intermediate coxae without a tooth or lamella at the postero-inner angle; calcaria pale;

distal half of wings fuscous, the proximal half subhyaline; cell 2nd $R_1 + R_2$ subtruncate at the tip; cell R_5 receiving vein M_{3+4} slightly beyond the middle; cell R_4 present but less distinct than R_5 and receiving vein M_2 at two-thirds the distance from base to tip; vein m-cu arising on vein Cu very distinctly before vein $M_4 + Cu_1$. Length, 12 mm.

Holotype. ♂, Brazil: Santarem, 11.xii.1909, in collection of Carnegie Museum, Pittsburg, Pa.

Paratypes. ♂, Brazil: Corumba, Matto Grosso, 14–23.xii.1919; ♂, Pat. (Patagonia?).

Superficially *spoliatrix* resembles *cyra* Cameron even in the form of the last tergite but the latter does not have a gibbose scutellum and has the intermediate coxae toothed within. It is clearly related to the group of species including *pyrene*, *coxalis* and *maevia* and may be distinguished from them by the form of the last tergite, the unmodified, postero-inner margin of the middle coxae and the entirely ferruginous abdomen.

One paratype bears a label "Pat", and a second label has been added "Patagonia". I believe the latter is an error. No other species of *Timulla* is so widely distributed in South America and *spoliatrix* is not likely to be an exception. The specimen is in the Museo Civico di Storia Naturale, Genoa, Italy.

Timulla (Timulla) coxalis sp. n.

Male. Head, thorax and legs black, except the distal fifth of scape, the pedicel entirely, and the proximal third (above) to half (beneath) of the first flagellar segment, yellowish, and the distal segments of the tarsus tinged with ferruginous; abdomen entirely ferruginous; head, thorax and legs clothed with pale pubescence, except a transverse band extending across the vertex between the posterior, inner margins of the eyes, the mesonotum, and most of the scutellum with sparse, black pubescence, the pale pubescence thick on the lateral areas of clypeus, the front, a broad band on the genae adjacent to the eyes and extending over the vertex posterior to the black pubescent area, a broad band at the posterior margin of the pronotum, the dorsum of the propodeum, and the elevated areas of the mesopleura; abdomen beneath clothed with sparse, pale pubescence, the tergites clothed for the most part with sparse, fulvous pubescence; mandibles shallowly but distinctly excised beneath; median, glabrous area of clypeus strongly elevated posteriorly, the elevated face subrectangular with its lateral angles rounded and its surface slightly concave; scape indistinctly bicarinate beneath; antennal scrobes carinate above; ocelli small, the distance between the eye margins and the lateral ocelli equal to three and one-half times the greatest diameter of the latter; parapsidal furrows almost obsolete on anterior third of mesonotum; scutellum gibbose; enclosed area of propodeum elongated, mostly obscured by pale pubescence, not elevated posteriorly into a tubercle; tegulae glabrous and bare except the anterior fourth and the inner half finely punctate and pale pubescent; second tergite with the disk almost impunctate, the lateral areas with close, moderate punctures, and the posterior margin with sparse, small punctures; median, impunctate area of last tergite terminating at a transverse arcuate, sharp carina; posterior margin of last tergite strongly emarginate medially; first sternite with a median, longitudinal carina on the anterior half; second sternite with sparse, moderate punctures, the latter sparser medially than elsewhere; sternites six and seven each with a pair of tubercles near the postero-lateral angles; hypopygium with a pair of lateral ridges on the anterior half, the ridges elevated posteriorly to form a pair of distinct teeth; posterior, inner angle of intermediate coxae produced into a conspicuous, lamellate process; calcaria pale; wings subfuscous with a fuscous band at the outer margin; cell 2nd $R_1 + R_2$ subtruncate at the tip; cell R_5 receiving vein M_{3+4} slightly before the middle; cell R_4 present but less distinct

than R_5 and receiving vein M_2 at three-fifths the distance from base to tip; vein m-cu arising on vein Cu slightly before vein $M_4 + Cu_1$. Length, 12 mm.

Holotype. ♂, COLOMBIA: Lake Sapatoza region, Chiriguana district, viii. and ix.1924 (*C. Allen*), in British Museum (Natural History), London.

Paratype. ♂, COLOMBIA: Santa Marta (*Fontanier*), 1852, in Muséum National d'Histoire Naturelle, Paris.

Related to *spoliatrix* and *maevia*. Easily recognised by the form of the last tergite, the lamellate intermediate coxae and the subrectangular, elevated face of the clypeus.

Timulla (Timulla) maevia sp. n.

Pl. 6, fig. 106, ♂.

Male. Head, thorax, legs and first abdominal segment black, remainder of abdomen ferruginous; distal third of scape, pedicel, first two segments of flagellum and proximal half of third flagellar segment beneath, all yellowish; head, thorax and legs with pale pubescence, except the mesonotum and anterior, median area of scutellum with sparse, blackish pubescence, the pale pubescence thick on the front anterior to the eye emarginations, the genae, the posterior part of vertex, a band at the posterior margin of the pronotum, dorsum of propodeum, and elevated areas of mesopleura; first tergite and all the sternites clothed with sparse, pale pubescence; posterior margin of first tergite, and remainder of the tergites entirely with sparse, fulvous pubescence; mandibles deeply excised beneath; median, glabrous area of clypeus elevated posteriorly, the elevated posterior margin thickened and reflexed, thus the face of the elevation transversely concave; anterior margin of clypeus straight, not emarginate medially; scape bicarinate beneath, the anterior carina sharper and more prominent than the posterior; antennal scrobes carinate above; ocelli small, the distance between the eye margins and the lateral ocelli three and one-third times the greatest diameter of the latter; parapsidal furrows distinct; scutellum gibbose; enclosed area of propodeum long and narrow, elevated posteriorly into a blunt tubercle; tegulae large, glabrous, impunctate except the anterior and inner margins and the inner, posterior fourth punctate and pale pubescent; second tergite almost impunctate on the disk; median, impunctate area of last tergite terminating in an arcuate carina, the terminal portion of the tergite beyond the carina perpendicular to the dorsum, the perpendicular face glabrous and with an indistinct, median, longitudinal carina; posterior margin of last tergite broadly, deeply emarginate; first sternite with a median, longitudinal carina on the anterior two-thirds; second sternite with sparse, moderate punctures; sixth and seventh sternites each with a pair of obscure, postero-lateral tubercles, those on the seventh more distinct than on the sixth; last sternite with a pair of lateral, longitudinal ridges on the anterior half, the ridges elevated posteriorly into dentiform tubercles; intermediate coxae dentate at the posterior, inner angles; calcaria pale; wings subfuscous; cell 2nd $R_1 + R_2$ indistinctly truncate at the apex; vein M_{3+4} received by cell R_5 at the middle; cell R_4 present but less distinct than R_5 and receiving vein M_2 at two-thirds the distance from base to tip. Length, 14 mm.

Holotype. ♂, Cat. no. 52125 U.S. National Museum, BRAZIL: Porto Velho, Rio Madeira (*Mann and Baker*).

Paratype. ♂, BRAZIL: Amazonas, (*Stevens*), 1860, in Naturhistorische Staatsmuseum, Vienna.

Related to *spoliatrix* and *coxalis*, but has the clypeus thickened and reflexed at the elevated posterior margin, has the enclosed area of the propodeum elevated posteriorly into a blunt tubercle, has the yellowish colour more extended on the scape and the flagellar segments, has the postero-lateral tubercles on

the sixth and seventh sternites very obscure, almost lacking, and has the form of the last abdominal tergite different from either of the first two species.

Timulla (Timulla) atricornis sp. n.

Pl. 6, fig. 102, ♂.

Mutilla rufiventris Cresson, 1902, *Trans. Amer. ent. Soc.* **28** : 61, male (Santarem specimen) (*nec* Klug).

Male. Head, thorax, last abdominal segment and legs, black, the remainder of the abdomen entirely ferruginous; antennae not marked with yellowish; head, thorax and legs clothed with pale pubescence, the latter appressed and somewhat thicker on the lateral areas of the clypeus, genae, front, posterior margin of pronotum, dorsum of propodeum and elevated areas of mesopleura, except the mesonotum and anterior median area of scutellum with sparse, black pubescence; abdominal sternites clothed with sparse, pale pubescence, the tergites with sparse, fulvous pubescence except the disk of the first tergite with pale pubescence and the last tergite with blackish pubescence; mandibles deeply excised beneath; median, glabrous area of clypeus elevated posteriorly, the elevated margin of the posterior face broadly arcuate; scape distinctly bicarinate beneath; antennal scrobes distinctly carinate above; ocelli small, the distance between the eyes and the lateral ocelli equal to approximately three and one-half times the greatest diameter of the latter; parapsidal furrows complete but shallow anteriorly; scutellum gibbose; enclosed area of propodeum not elevated posteriorly to form a distinct tubercle, long and narrow, the sides converging towards the tip to form a distinct angle; tegulae glabrous, impunctate, except the anterior and inner margins and the postero-inner quadrant, all with fine punctures and sparse, pale pubescence; second tergite with sparse, moderate punctures on the disk, but becoming closer laterally, and the broad, posterior margin with distinct, very small punctures; dorsal and posterior faces of last tergite separated by an inverted V-shaped, glabrous ridge, the median, impunctate area of the dorsal face terminating at the apex of the V, the posterior face triangular in outline, perpendicular to the dorsal face and finely, longitudinally rugose; posterior margin of last tergite strongly, roundly emarginate medially; first sternite with a median, longitudinal carina on the anterior two-thirds; second sternite with very sparse, moderately large punctures, the latter closer at the lateral margins; sixth sternite with a pair of very indistinct tubercles at the postero-lateral angles; seventh sternite with the postero-lateral tubercles small and poorly developed; last sternite with a pair of lateral ridges on the anterior half, the ridges elevated posteriorly to form a pair of distinct, dentiform tubercles; postero-inner angles of intermediate coxae not dentate; calcaria pale; proximal three-fourths of wings subhyaline, the distal fourth fuscous, forming a broad fuscous margin; cell 2nd $R_1 + R_2$ broadly rounded at the apex; cell R_5 receiving vein M_{3+4} slightly before the middle; cell R_4 present but less distinct than R_5 and receiving vein M_2 slightly beyond the middle; vein m-cu arising on vein Cu distinctly before vein $M_4 + Cu_1$. Length, 11 mm.

Holotype. ♂. Brazil : Santarem, in Carnegie Museum, Pittsburg, Pa.

Closely related to the following species, *corumba*, but differs in the entirely black flagellum, and in having the last abdominal segment black. Also related to *mediata* in the general form of the last tergite but differs from that species in the absence of a tubercle at the posterior margin of the enclosed space of propodeum, number of black abdominal segments and in the poorly developed postero-lateral tubercles on the sixth and seventh sternites.

Timulla (Timulla) corumba sp. n.

Pl. 7, fig. 114, ♂.

Mutilla rufiventris Cresson, 1902, *Trans. Amer. ent. Soc.* **28** : 61, male (Corumbá specimen) (*nec* Klug).

Male. Head, thorax and legs black, except the first three segments of flagellum yellowish beneath, the third marked less with yellow than the first two; abdomen entirely ferruginous; head, thorax and legs clothed with pale pubescence, the latter thick and appressed on the lateral areas of clypeus, front, genae, posterior margin of pronotum and elevated areas of mesopleura, sparse and appressed on dorsum of propodeum and remainder of mesopleura, sparse and erect elsewhere, except the mesonotum and anterior median area of scutellum with sparse, black pubescence; abdominal sternites clothed with sparse, pale pubescence, the tergites with sparse, fulvous pubescence, the last tergite with the fulvous pubescence darker; mandibles deeply excised beneath; median, glabrous area of clypeus elevated posteriorly, the elevated margin broadly arcuate; scape distinctly bicarinate beneath; antennal scrobes distinctly carinate above; ocelli small, the distance between the eyes and the lateral ocelli approximately equal to three and one-half times the greatest diameter of the latter; parapsidal furrows complete, but shallow anteriorly; scutellum gibbose; enclosed area of propodeum short, about twice as long as broad, the sides converging posteriorly to form an angle; tegulae glabrous, except the anterior margin and inner two-fifths with small punctures and pale pubescence; second tergite with moderate punctures, sparse on the disk and becoming close laterally, the broad, posterior margin with small punctures; median, impunctate area of last tergite terminating at a short, transverse, arcuate carina, the perpendicular face of the tergite beyond the carina slightly concave; posterior margin of last tergite strongly emarginate medially; first sternite with a median, longitudinal carina on the anterior three-fourths; second sternite with large, shallow punctures, sparse medially and closer towards the sides; postero-lateral tubercles of sixth and seventh sternites very small and not conspicuous; last sternite with a pair of lateral ridges on the anterior half, the ridges strongly elevated posteriorly to form a pair of distinct teeth; intermediate coxae carinate along the posterior margin but the postero-inner angles not toothed; calcaria pale; proximal three-fourths of wings subhyaline, the distal fourth fuscous; cell 2nd $R_1 + R_2$ rounded distally but appearing slightly subtruncate; cell R_5 receiving vein M_{3+4} very slightly before the middle; cell R_4 present but less distinct than R_5 and receiving vein M_2 two-thirds the distance from base to apex; vein m-cu arising on vein Cu distinctly before vein $M_4 + Cu$. Length, 11 mm.

Holotype. ♂, Brazil : Corumbá, Matto Grosso, iii., lowland, in Carnegie Museum, Pittsburg, Pa.

Paratypes. 2 ♂♂, Brazil : Corumbá, Matto Grosso, iii., lowland.

Related to *atricornis* but differs in having the proximal segments of the flagellum yellowish beneath, the entirely ferruginous abdomen and in the short, arcuate carina on the last tergite. Neither *corumba* nor *atricornis* is similar or related to *rufiventris* Klug, since the latter belongs to a group of species which does not have the posterior margin of the last tergite emarginate medially.

Timulla (*Timulla*) *mediata* (Fabricius).

Pl. 6, fig. 105, ♂; Pl. 1, fig. 3, ♀.

Dorylus mediatus Fabricius, 1805,* *Syst. Piez.* : 428, male.
Mutilla lineola Fabricius, 1805, *Syst. Piez.* : 437, female.
Mutilla lineola Olivier, 1811, *Encycl. méthod. Insect.* **8** : 65, n. 61, female ?.

* For date, *see* Griffin, F. J., *in* Richards, O. W., 1935, *Trans. ent. Soc. Lond.* **83** : 144.

Labidus ? mediatus Shuckard, 1840, *Ann. Mag. nat. Hist.* **5** : 261, male.
Dorylus mediatus Westwood, 1842, *Arcana Entomologica* **1** : 78, male.
Mutilla mediata Gerstaecker, 1874, *Arch. Naturg.* **40** : 323, male (in part, Demerary specimen).
Mutilla mediata Dalle Torre, 1897, *Cat. Hymen.* **8** : 59, female and male (in part).
Mutilla lineola André, 1903, *Gen. Ins.* **11** : 42, n. 34, female.
Mutilla mediata André, 1903, *Gen. Ins.* **11** : 42, n. 39, male.
Mutilla moorei Cameron, 1912, *Timehri, Brit. Guiana,* (3) **2** : 413, male (**syn. n.**).
Mutilla longilineata Cameron, 1912, *Timehri, Brit. Guiana,* (3) **2** : 413, female (**syn. n.**).
Timulla (*Timulla*) *mediata* Mickel, 1937, *Rev. ent. Rio* **7** : 169, male.

Male. Head, thorax, first, sixth and last abdominal segments and legs, black, remainder of abdomen, tip of scape, pedicel and first segment of flagellum except the distal third above, all ferruginous; head, thorax, first abdominal tergite except the posterior margin, and all the abdominal sternites with pale pubescence, the latter thicker and appressed on the front, genae, posterior margin of pronotum, dorsum of propodeum, and elevated areas of mesopleura, except the mesonotum and anterior median area of scutellum with sparse, black pubescence; posterior margin of first abdominal tergite and tergites two to five with sparse, fulvous pubescence, the terminal tergites with fulvo-fuscous pubescence; mandibles deeply excised beneath; median, glabrous area of clypeus elevated posteriorly, the elevated surface flat or very shallowly concave; scape distinctly bicarinate beneath; antennal scrobes weakly carinate above; ocelli small, the distance between the eye margins and the lateral ocelli four times the greatest diameter of the latter; parapsidal furrows distinct but not complete anteriorly; scutellum strongly gibbose; dorsum of propodeum with an elongate, enclosed space, the latter slightly elevated posteriorly forming a weak tubercle; tegulae glabrous, impunctate, except anterior and inner margins and posterior inner quadrant finely punctate and pale pubescent; second tergite with moderate punctures, very sparse on the disk, close but separated at the sides and posterior margin; median impunctate area of last tergite slightly elevated, terminating at an inverted V-shaped, glabrous ridge, the posterior face formed by the latter perpendicular to the dorsal face, triangular in outline and longitudinally striate; posterior margin of last tergite deeply, broadly emarginate; first sternite with a median, longitudinal carina terminating in a slight tubercle posteriorly; second sternite with scattered, large punctures; sixth sternite with a pair of distinct, but not prominent postero-lateral tubercles; seventh sternite with a pair of distinct postero-lateral tubercles; last sternite with a pair of prominent, anterior, oblique, lateral ridges elevated posteriorly to form a pair of dentiform tubercles; intermediate coxae without a tooth at the postero-inner angles; calcaria pale; wings subfuscous; cell 2nd $R_1 + R_2$ indistinctly truncate at the tip; cell R_5 distinctly less than three times as long as broad, receiving vein M_{3+4} slightly before the middle; cell R_4 present but less distinct than R_5 and receiving vein M_2 distinctly beyond the middle. Length, 13 mm.

Female. Head, meso- and metapleura, abdomen and legs, black; antennal tubercles and remainder of thorax ferruginous; head clothed with sparse, pale pubescence, except the front with fuscous pubescence and the vertex with an obscure, transverse band of appressed, pale pubescence; thorax clothed with sparse, pale pubescence except the dorsum with sparse, dark fulvous pubescence; abdomen above for the most part black pubescent, the pale pubescent markings as follows: a complete, posterior marginal band on the first tergite; second tergite with a pair of lateral, longitudinal stripes somewhat indistinct posteriorly and a narrow, posterior marginal band; and tergites three to five each with a pair of linear, lateral spots, those on tergite five widely separated; abdominal sternites clothed with sparse, pale pubescence; antennal scrobes carinate above; thorax not broader posteriorly than anteriorly; sides of dorsum of propodeum almost straight, the mesonotal area only slightly constricted; lateral margins of posterior face of propodeum denticulate; scutellar scale present and distinct; sides of propodeum with small, scattered punctures; second tergite with moderate punctures visible through the pubescence and closely interspersed with fine punctures; pygidium irregularly rugose, except the

posterior margin finely granulate; first sternite with a median, longitudinal carina; second sternite with large, separated punctures; calcaria pale. Length, 8 mm.

Type of *mediata*. ♂, America meridionali. (*Dom Smidt.*) Mus. Dom. Sehestedt, in Zoological Museum, University of Copenhagen, Denmark.

Lectotype of *lineola*. ♀, Essequibo (*Smidt*), Dom. Sehestedt, in Zoological Museum, University of Copenhagen, Denmark.

The types of *moorei* Cameron and *longilineata* Cameron are in the British Museum (Natural History), London.

Plesiotypes. ♂ and ♀ (*in copula*), British Guiana, Blairmont, 9.viii.1923 (*H. E. Box*, 136), in U.S. National Museum.

Specimens examined. 3 ♂♂, British Guiana: Blairmont, 6, 9 and 28.viii.1923 (*H. E. Box*); 3 ♂♂, 2 ♀♀, Blairmont, ix.1923 (*F. X. Williams*); ♂, ♀ (*in copula*), Blairmont, x.1923 (*F. X. Williams*); 4 ♂♂, Blairmont, 15.x.1923 (*H. E. Box*); 2 ♂♂, Georgetown (Botanic Garden), 2.iv.1914 and 26.xi.1915 (*G. E. Bodkin*); ♂, Kamakusa; 2 ♂♂, British Guiana (*A. W. Bartlett*); ♂, British Guiana (*J. Rodway*); 2 ♂♂, British Guiana; ♂, Ecuador: Tena, 14.ii.1923 (*F. X. Williams*); ♀, Colombia: ♂, ♀ (*in copula*), Trinidad, B.W.I. (*F. W. Urich*); ♀, St. Augustine, 29.iv.1933 (*D. Vesey-FitzGerald*); ♂, Trinidad, B.W.I., 26.v.1932 (*A. M. G[wynn]*); ♀, Trinidad, B.W.I., 29.v.1933 (*A. M. G.*); ♀, Trinidad, B.W.I., 4.vi.1933 (*A. M. G.*); ♂, St. Augustine, 9.vi.1933 (*D. Vesey-FitzGerald*); ♀, Trinidad, B.W.I., vi. (*D. Vesey-FitzGerald*); ♂, Tunapuna, 22.viii.1933 (*D. Vesey-FitzGerald*); ♀, B.W.I., 13.xi.1931 (*D. Vesey-FitzGerald*); ♀, St. Augustine, 20–30.iv.1929 (*Darlington*); ♀, Surinam: Kwakoegron, Saramacca river, 12.vi.1927; ♀, Sint Barbara Pln., Surinam river, 11.iv.1927; 2 ♀♀, French Guiana: St. Jean du Maroni, iv. and x. (*R. Benoist*); ♂, St. Jean du Maroni; ♂, ♀, Gourdonville, x. (*R. Benoist*); ♂, Les Hattes, Bas Maroni; 2 ♀♀, Charvein, xii. and i. (*R. Benoist*); ♂, Cayenne, iii.1917; ♂, Brazil: Amazonas (*H. W. Bates*); ♂, Amazonas; ♂, Rio Machados; ♂, Itaituba, Rio Tapajos, 5.ix.1902 (*Ducke*); ♂, Santarem; ♂, Para, iv.1903 (*Ducke*); ♂, Para; ♂, Rio Arrayolos, 22.iv.1903 (*Ducke*); ♀, Bonito Prov., Pernambuco, 2.x.1883, on cotton; 3 ♂♂, Bahia (*E. C. Reed*); 3 ♀♀, Salabro, Prov. de Bahia, 6.vii.1885 (*E. Gounelle*); 2 ♀♀, Bahia; ♂, 3 ♀♀, Brazil; ♀, Amér. meridionale; ♀, America.

The plesiotypes, from which the redescriptions were drawn and which were taken *in copula*, have been compared with the types of *mediata*, *moorei*, *lineola* and *longilineata*. The three males and the three females are unquestionably the same. Since *mediata* has priority the three other names fall as synonyms. A second specimen labelled by Fabricius as *lineola* is in the Kiel collection. It is conspecific with the lectotype.

Westwood (1842) was the first to call attention to the fact that *Dorylus mediatus* Fabricius was really a male mutillid, after Erichson had examined the type at Copenhagen and communicated with him. I have examined the specimen recorded by Klug (1821) as *lineola* and find it is not the same as the Fabrician species; it is described hereafter as *sieberi*. *Mutilla zonata* Spinola which has been placed as a synonym of *mediata* is not the same, but a good species. The female specimen recorded by Burmeister (1854) as *lineola* is a distinct species described later in this paper as *lineoloides*, while the male he recorded as *lineola* is the same as *rufiventris* (Klug). Gerstaecker (1874) had the Klug and Burmeister specimens before him and in addition had a male specimen of *mediata* labelled " Demerary," a male specimen from Colombia and a male specimen from Cayenne, both of which are *rufogastra* (Lepeletier), and a female specimen labelled " Cayenne " that is identical with the female described here-

after for *scoparia* (Gerstaecker). I have not seen the specimens recorded by Burmeister (1875) as *lincola*, but since they came from Argentina and are therefore a great distance outside the range of *mediata* they are undoubtedly not the same as the Fabrician species.

The male of *mediata* is related to *obtusata*, from which it may be separated as indicated in the key. The coloration of the abdomen varies slightly in various parts of the geographical range. One specimen from British Guiana has the first abdominal segment ferruginous instead of black; occasional specimens from British Guiana have the last three segments black instead of only the last two, and one or two specimens even have the median part of the fourth tergite tinged with black as well as the last three segments black; the male specimens from Bahia, Brazil, have only the last segment black. The female specimens vary in the distinctness of the posterior third of the longitudinal, pale pubescent stripes on the second tergite. All of the specimens from northern South America have the posterior third of these stripes present but less distinct than the anterior two-thirds. I have seen no specimens where the posterior third of the stripes was obsolete. Specimens from Bahia, Brazil, however, have the posterior third of the stripes as distinct as elsewhere so that the latter appear continuous from the anterior to posterior margins.

Timulla (Timulla) mediata var. **pexsa** var. n.

Pl. 1, fig. 4, ♀.

Mutilla phalerata Cresson, 1902, *Trans. Amer. ent. Soc.* **28** : 17, female (in part, Chapada specimen).

Female. Similar to the female of *mediata* (Fabricius) but the black maculation of the meso- and metapleura extends on to the mesonotal area forming a pair of lateral, marginal, narrow, elongate black spots; lateral, pale pubescent stripes of second abdominal tergite continuous from the anterior to posterior margins. Length, 8·5 mm.

Holotype. ♀, Brazil : Chapada, Matto Grosso, v., in collection of American Entomological Society, Philadelphia, Pa.

Paratypes. ♀, Brazil : Chaves, Island Marajo, 6.xii.1901 (*Ducke*); ♀, French Guiana : Roches de Kouru; ♀, British Guiana : Blairmont, viii.1923 (*H. E. Box*).

The holotype and the paratype from Brazil have the lateral, pale pubescent stripes of the second tergite entirely complete; the paratypes from French Guiana and British Guiana have the stripes narrowly interrupted immediately anterior to the posterior marginal band. Specimens of *mediata* also vary in this way.

Timulla (*Timulla*) *obtusata* Mickel.

Pl. 8, fig. 119, ♂.

Timulla (*Timulla*) *obtusata* Mickel, 1937, *Rev. Ent., Rio* **7** : 169–171, male.

Holotype. ♂, Brazil : Jabaty, Para, v.1924 (*F. X. Williams*), in University of Minnesota collection.

Distribution : Brazil : Amazonas, Matto Grosso and Para; French Guiana and Surinam.

Specimens examined. 2 ♂♂, Brazil : Para, 22 and 31.viii.1901 (*Ducke*); ♂, Rio Arrayolos, 21.iv.1903 (*Ducke*); 2 ♂♂, French Guiana.

Related to *mediata* but differs in the form of the clypeus in which the posterior, elevated margin is reflexed, thickened and obtusely angulate medially

so that the median, glabrous area appears strongly, transversely concave or transversely grooved; also differs from *mediata* in having cell R_5 of the anterior wings narrow and long.

Timulla (Timulla) ashmeadi sp. n.

Pl. 5, fig. 97, ♂; Pl. 1, fig. 5, ♀.

Timulla rufiventris Ashmead, 1900, *Trans. ent. Soc. Lond.* **1900** : 238, male, female (*nec* Klug).

Male. Head, thorax and legs black, the abdomen entirely ferruginous; head, thorax and legs clothed with pale pubescence, thick and appressed on the posterior, ventral and lower, inner eye margins, and the posterior margin of the pronotum, sparse and appressed on the front and genae, sparse and erect elsewhere, except a transverse area on the head through the ocelli, the mesonotum and anterior half of scutellum with sparse, black pubescence; abdomen clothed throughout with sparse, fulvous pubescence, that on the sternites paler than on the tergites; mandibles deeply excised beneath; median, glabrous area of clypeus elevated posteriorly, the elevated face transversely subrectangular and slightly concave, the posterior, elevated margin slightly arcuate and the lateral angles of the subrectangular area rounded; scape distinctly bicarinate beneath; antennal scrobes weakly carinate above; ocelli moderate in size, the distance between the eye margins and the lateral ocelli approximately equal to twice the greatest diameter of the latter; parapsidal furrows well developed posteriorly but practically obsolete on the anterior third; scutellum gibbose; enclosed area of propodeum long and narrow, subtriangular, elevated posteriorly to form a strong, conspicuous tubercle; tegulae large, convex, the disk and outer margin glabrous, bare and impunctate, elsewhere the tegulae finely punctate and with subappressed, pale pubescence; second tergite almost impunctate on the disk, the latter with only a few, moderate punctures, the lateral areas of the tergite with well separated, moderately large punctures, and the broad, slightly depressed, posterior margin with sparse, moderate to small punctures; median, impunctate area of last tergite terminating at the apex of an inverted V-shaped, glabrous ridge separating the dorsal and posterior faces, the posterior face perpendicular to the dorsal and concave; posterior margin of last tergite deeply, roundly emarginate medially; first sternite with a median, longitudinal carina on the anterior three-fourths; second sternite with large, distinct, sparse punctures; postero-lateral tubercles weakly developed on sternites six and seven; last sternite finely punctate and with a pair of lateral ridges on the anterior half, the ridges elevated posteriorly forming dentiform tubercles; calcaria pale; wings fuscous; cell 2nd $R_1 + R_2$ broadly truncate at the tip; cell R_5 receiving vein M_{3+4} slightly beyond the middle; cell R_4 less distinct than R_5 and receiving vein M_2 distinctly beyond the middle; vein m-cu arising on vein Cu anterior to vein $M_4 + Cu_1$, the distance between the two veins on Cu almost equal to the length of vein $M_4 + Cu_1$. Length, 12 mm.

Female. Piceous to black throughout; head clothed with inconspicuous, appressed, pale pubescence and erect, fuscous hairs; thorax with sparse, pale pubescence except the dorsum with sparse, erect and recumbent, fuscous to black hairs; abdomen with sparse, pale pubescence beneath, the pale pubescence thick at the posterior margin of the sternites, the tergites clothed for the most part with black pubescence, the golden yellow pubescent markings as follows: a broad, complete, posterior marginal band on the first tergite; second tergite with a pair of very large, subcircular, antero-lateral spots and a very broad, complete, posterior marginal band; tergites three to five each with a pair of elongate, rectangular spots, those on the fifth tergite approximate but not confluent; antennal scrobes weakly carinate above; dorsum of thorax with large, dense, more or less confluent punctures, the latter becoming coarser and approaching reticulate on the posterior face of propodeum; scutellar scale present and distinct; mesonotal-scutellar suture absent; lateral margins of

posterior face of propodeum denticulate; sides of propodeum with moderate, scattered punctures anteriorly and large, sparse punctures posteriorly; second tergite finely punctate, interspersed with moderate, scattered punctures visible through the pubescence; pygidial area distinct, margined laterally, irregularly rugose anteriorly and granulate posteriorly; first sternite with a median, longitudinal carina on the anterior two-thirds; second sternite with large, sparse punctures; calcaria pale. Length, 8·5 mm.

Holotype and Allotype. ♂ and ♀ respectively (*in copula*), St. Vincent, W.I.: Windward side (*H. H. Smith*), in British Museum (Natural History), London. These are the specimens mentioned (*in coitu*) by Ashmead (1900).

Paratypes. ♂, St. Vincent, W.I.: Windward side (*H. H. Smith*); ♂, 2 ♀♀, Kingston (*H. H. Smith*); 4 ♂♂, ♀, St. Vincent, W.I. (*H. H. Smith*); ♂, Guadeloupe, W.I. (Bosc collection).

The male is related to *mediata* and even more closely to *proclivis*, the following species. It differs from *mediata* in the entirely black flagellum, the more transverse, posterior elevated face of the clypeus, the more strongly elevated tubercle into which the enclosed space of the propodeum is elevated, and the entirely ferruginous abdomen. It differs from *proclivis* in the sparsely pubescent pleural areas of the thorax, the more transverse, elevated face of the clypeus and in its average smaller size. The female appears very different from other neotropical *Timulla* spp. on account of its entirely black colour and golden yellow pubescent markings. When all of the females are known for the males which have the posterior margin of the last tergite emarginate, its relationships can probably be more clearly expressed. The male is not similar to *rufiventris* (Klug), except in colour, and the misidentification of this species as *rufiventris* was due to the fact that the diagnostic characters of the latter were not known until Klug's type was recently examined. The one male specimen from Guadeloupe appears to be exactly like those from St. Vincent. The specimen is not in good condition and when additional material of both sexes is available from Guadeloupe the status of this species in that island may need to be altered. The males vary in length from 10 to 16 mm., the females from 6 to 8·5 mm.

✓

Timulla (Timulla) proclivis sp. n.

Pl. 6, fig. 104, ♂.

Male. Head, thorax and legs entirely black; abdomen entirely ferruginous; head, thorax and legs clothed with pale pubescence, thick and appressed on the front, posterior portion of vertex, genae, posterior margin of pronotum and elevated areas of mesopleura, sparse and erect elsewhere, except the mesonotum with sparse, erect, black pubescence; abdomen beneath clothed with sparse, pale pubescence, the tergites clothed with sparse, fulvous pubescence; mandibles excised beneath; median, glabrous area of clypeus slightly concave, the posterior, elevated margin evenly arcuate; anterior margin of clypeus medially very slightly concave; scape bicarinate beneath, distinctly dilated and flattened distally, the posterior carina much more prominent and sharp than the anterior one; antennal scrobes carinate above; ocelli moderate in size, the distance between the eye margins and the lateral ocelli two and one-fourth times the diameter of the latter; parapsidal furrows distinct on the posterior two-thirds of mesonotum; scutellum gibbose; enclosed area of propodeum long, the sides slightly converging, elevated posteriorly forming a blunt tubercle; tegulae smooth, polished, the anterior and inner margins, and posterior, inner quadrant with pale pubescence; second tergite almost impunctate on the disk, with moderate, distinct punctures at the sides; median, impunctate area of last tergite terminating at the apex of an inverted V-shaped carina separating the dorsal and posterior faces of the tergite, the posterior

face perpendicular, triangular in outline and slightly concave, without a median, longitudinal carina; posterior margin of the last tergite strongly, roundly emarginate; first sternite with a median, longitudinal carina on the anterior two-thirds; second sternite with very sparse, moderate punctures; sternites six and seven with a pair of obscure, postero-lateral tubercles; last sternite with a pair of prominent, lateral ridges on the anterior half, the ridges each terminating in a tooth; calcaria pale; wings subfuscous; cell 2nd $R_1 + R_2$ distinctly truncate at the apex; cell R_5 receiving vein M_{3+4} at the middle, cell R_4 present but less distinct than R_5 and receiving vein M_2 at two-thirds the distance from base to apex; cell R_5 comparatively short, about two and one-half times longer than broad, the relative length and width, 2·2–0·9. Length, 14 mm.

Holotype. ♂, Colombia: Rio Frio, Magdalena, 20.x.1927 (*G. Salt*), in University of Minnesota collection.

Paratypes. ♂, Colombia: Rio Frio, Magdalena, 13.vii.1927 (*G. Salt*); ♂, Ecuador; ♂, Panama: Darien; ♂, Canal Zone: Balboa, 22.x.1914 (*T. Hallinan*); ♂, Panama: Taboga Island, 14.ii.1912 (*A. Busck*).

Related to *byblis*, *ashmeadi* and *mediata*; differs from all three in the dilated and flattened scape; differs from *mediata* also in the entirely black flagellum and the ferruginous terminal abdominal segments; differs from *byblis* in the ferruginous first abdominal segment, although the specimens from Darien and Taboga Island, Panama, have the first segment more or less infuscated.

Timulla (*Timulla*) *byblis* Mickel.

Pl. 8, fig. 118, ♂.

Timulla (*Timulla*) *byblis* Mickel, 1937, *Rev. Ent. Rio* **7**: 172–174, male.

Holotype. ♂, Trinidad, B.W.I., vii.1923, in University of Minnesota collection.

Distribution. Colombia, Venezuela, Trinidad, B.W.I., Surinam (Dutch Guiana), Cayenne (French Guiana), and Brazil.

Related to *mediata*, *ashmeadi* and *proclivis*; differs from *mediata* in the entirely black flagellum, the ferruginous terminal segments of the abdomen, and in the transversely concave clypeus; differs from *ashmeadi* in the transversely concave clypeus, the more densely pale pubescent mesopleura and the black first abdominal segment; differs from *proclivis* in the cylindrical scape with the carinae equally developed, the transversely concave clypeus and the black first abdominal segment.

Timulla (Timulla) cordillera sp. n.

Pl. 7, fig. 110, ♂.

Male. Head, thorax, first (except posterior margin) and last two abdominal segments and legs black; abdominal segments two to five ferruginous; head, thorax and legs clothed with pale pubescence, thick and appressed on the front, genae, posterior part of vertex, a band at the posterior margin of pronotum and elevated areas of mesopleura, sparse and erect elsewhere, except the mesonotum and median, anterior area of scutellum with sparse, black pubescence and the postero-inner eye margins with a few fuscous, erect hairs; all the abdominal sternites and the first tergite with sparse, pale pubescence, the tergites, except the last two, with sparse fulvous pubescence; last two tergites with dark, fulvous pubescence, except the sixth also with a pair of obscure, lateral spots of sparse, appressed pale pubescence; mandibles deeply excised beneath; median, glabrous area of clypeus strongly, transversely concave, the posterior elevated margin evenly arcuate; scape

cylindrical, the two ventral carinae equally developed; antennal scrobes weakly carinate above; ocelli small, the distance between the eye margins and the lateral ocelli approximately equal to three times the greatest diameter of the latter; parapsidal furrows complete but very shallow anteriorly; scutellum strongly gibbose; enclosed area of propodeum elongate, narrowed posteriorly, and elevated at its posterior extremity to form a weak tubercle; tegulae glabrous, impunctate except the broad, anterior and inner margins and the postero-inner quadrant finely punctate and pale pubescent; second tergite with the disk almost impunctate, the lateral areas with moderate, distinct, separated punctures and the depressed, posterior margin with moderate to small, distinct punctures; median, impunctate area of last tergite terminating at an inverted V-shaped carina, the latter forming the upper margin of the triangular perpendicular posterior face; posterior margin of last tergite deeply roundly emarginate medially; first sternite with a median, longitudinal carina on the anterior three-fifths; second sternite with moderately large, sparse punctures and with fine, close punctures at the lateral thirds of the posterior margin; sixth sternite with a pair of weak, postero-lateral tubercles; seventh sternite with a pair of distinct, postero-lateral tubercles; last sternite with a pair of lateral ridges on the anterior half, the ridges terminating in somewhat dentiform tubercles; calcaria pale; proximal third of wings subhyaline, the distal two-thirds fuscous; cell 2nd $R_1 + R_2$ subtruncate at the tip; cell R_5 receiving vein M_{3+4} slightly before the middle; cell R_4 present but less distinct than R_5 and receiving vein M_2 at the middle; vein m-cu originating on vein Cu anterior to vein $M_4 + Cu_1$. Length, 14 mm.

Holotype. ♂, Peru: Puerto Bormadez, Rio Pichio, 12–19.vii.1920, in Cornell University collection.

Paratypes. ♂, Peru Juanjui; ♂, Bolivia: Corioco.

Related to *byblis* and *mediata*; differs from *mediata* in the entirely black flagellum and in the obscure, pale pubescent spots on the sixth tergite; differs from *byblis* in the pubescent spots on the sixth tergite and in the black terminal segments of the abdomen.

Timulla (*Timulla*) *flavofasciata* (André). (New combination.)

Pl. 7, fig. 111, ♂; Pl. 1, fig. 6, ♀.

Mutilla flavofasciata André, 1908, *Z. Hymen. Dipt.* **8**: 14, male and female.

Holotype and Allotype. ♀ and ♂ respectively, Argentine Republic: Chaco de Santiago del Estero (*Wagner*, 1904), in Muséum National d'Histoire Naturelle, Paris.

Specimens examined. 2 ♂♂, Argentine Republic: Averias, Bords du Rio Salado, Prov. de Santiago del Estero, xii.1909 (*E. R. Wagner*); ♂ and ♀ (*in copula*), Mistol Pass, Env. d'Icano, Chaco de Santiago del Estero (*E. R. Wagner*), 1913; 2 ♀♀, Env. d'Icano, Bords du Rio Salado, Chaco de Santiago del Estero (*E. R. Wagner*), 1909 and 1910; ♂, Rio Salado, Chaco de Santiago del Estero, xi.; ♂, Rio Dulce, Chaco de Santiago del Estero; ♀, Villa Ana. F.C.S.F., 15.xii.1923 (*K. J. Hayward*); ♀, Villa Ana, F.C.S.F., ix.1924 (*K. J. Hayward*); ♂, Estancia la Noria, Rio San Javier, Santa Fé, 17.xii.1911 (*G. E. Bryant*); ♂, Estancia la Noria, Rio San Javier, Santa Fé, 27.xii.1911 (*G. E. Bryant*); ♂, Estancia la Noria, Rio San Javier, Santa Fé, 4.i.1912 (*G. E. Bryant*); ♀, Fives Lilles, Santa Fé, iv.1924.

The female of this species may be recognised by the thorax, which is narrower posteriorly than anteriorly, by the absence of the scutellar scale and the narrow bands of pale pubescence on tergites three to five instead of the usual pale pubescent spots, the bands on tergites three and four narrowly interrupted

with black; the male is characterised by the emarginate, posterior margin of the last tergite, the median, impunctate area terminating at a pair of tubercles, the gibbose scutellum, and the concave, median, glabrous area of the clypeus.

Timulla (Timulla) dulcis sp. n.

Pl. 7, fig. 112, ♂.

Male. Head, thorax and legs entirely black; abdomen entirely ferruginous; head, thorax and legs clothed with pale pubescence, thick and appressed on the front anterior to the median ocellus, posterior half of the vertex, genae, pronotum, dorsum of propodeum and elevated areas of mesopleura, sparse elsewhere, except the mesonotum and anterior median area of scutellum with sparse, black pubescence; abdominal tergites clothed with sparse, fulvous pubescence, the sternites with sparse, pale pubescence; mandibles not excised beneath; median, glabrous area of clypeus strongly concave, the posterior, elevated margin evenly arcuate; scape obscurely bicarinate beneath and with a brush of pale hairs on the distal two-thirds beneath; antennal scrobes slightly but distinctly carinate above; parapsidal furrows distinct on the posterior two-thirds of mesonotum; scutellum not gibbose, evenly convex throughout; enclosed area of propodeum with the sides straight and converging on the posterior fifth, not at all elevated posteriorly; tegulae glabrous, impunctate except the anterior and inner margins punctate and with intermixed black and pale pubescence; median third of second tergite glabrous, almost impunctate, the lateral thirds with moderate, distinct, close punctures; median, impunctate area of last tergite narrow, terminating at the middle of a sharp, transverse carina, the latter almost as long as the width of the tergite and when viewed posteriorly distinctly angulate medially; posterior margin of last tergite broadly emarginate medially; first sternite without a median, longitudinal carina; second sternite with moderate, somewhat indistinct punctures, sparse medially, becoming close laterally; seventh sternite with a pair of obscure tubercles at the postero-lateral angles; last sternite with a pair of lateral ridges on the anterior half, the ridges strongly elevated posteriorly into a pair of conspicuous teeth; postero-inner angle of middle coxae produced into a slight tooth; calcaria pale; wings pale fuscous; cell 2nd $R_1 + R_2$ truncate at the tip; cell R_5 receiving vein M_{3+4} at the middle; cell R_4 present but less distinct than R_5 and receiving vein M_2 at the middle. Length, 14 mm.

Holotype. ♂, Argentine Republic: Rio Dulce, Chaco de Santiago del Estero, xi., in Muséum National d'Histoire Naturelle, Paris.

Related to *flavofasciata* (André), and superficially appears much the same; differs in its smaller size, the form of the last tergite, *i.e.*, the median, impunctate area terminating at a transverse carina instead of at a pair of tubercles as in *flavofasciata*, the much less deeply emarginate, posterior margin of the last tergite, the paler wings and the entirely ferruginous abdomen. The form of the clypeus, scape and first abdominal sternite is much the same in both species. *T. dulcis* also differs from *flavofasciata* in having the scutellum evenly convex throughout rather than distinctly gibbose.

Timulla (*Timulla*) *leona* (Blake).

Mutilla leona Blake, 1871, *Trans. Amer. ent. Soc.* **3** : 230, female.
Mutilla leona Blake, 1886, *Trans. Amer. ent. Soc.* **13** : 200, female.
Mutilla leona Cameron, 1894, *Biol. Centr.-Amer., Hymen.* **2** : 269, female.
Mutilla leona Dalle Torre, 1897, *Cat. Hymen.* **8** : 53, female.
Mutilla leona Fox, 1900, *Ent. News* **11** : 401, female.
Mutilla leona André, 1903, *Gen. Ins.* **11** : 42, n. 32, female.
? Mutilla nestor Melander, 1903, *Trans. Amer. ent. Soc.* **19** : 323, male.
Timulla (*Timulla*) *leona* Mickel, 1937, *Ent. Amer.* (n.s.) **17** : 21–25, female and male, Pl. 1, fig. 5, male.

Type. ♀, Mexico (*F. Sumichrast*), in collection of American Entomological Society, Philadelphia.

Allotype. ♂, Louisiana : Tallulah, 17.vii.1925, in University of Minnesota collection.

The only specimen of this species from Mexico which I have seen is the type. Since the known geographical range in the United States includes south-east Texas (Brownsville), the species will probably be found in the Mexican states of Tamaulipas and Neuvo Leon. *T. leona* is closely related to the following species.

Timulla (*Timulla*) *prominens* subsp. *prominens* (Cameron). (New combination.)

Pl. 5, fig. 98, ♂; Pl. 1, fig. 7, ♀.

Mutilla prominens Cameron, 1894, *Biol. Centr.-Amer., Hymen.* **2** : 273, female.
Mutilla prominens Dalle Torre, 1897, *Cat. Hymen.* **8** : 74, female.
Mutilla ardens André, 1898, *Ann. Soc. ent. Fr.* **67** : 38, female and male (*nec* Gerstaecker).
Mutilla prominens André, 1903, *Gen. Ins.* **11** : 42, n. 49, female.

The following redescription has been drawn from Cameron's type :

Female. Head and abdomen black, except most of the mandibles, antennal tubercles, scape, pedicel and first segment of flagellum ferruginous; thorax and legs ferruginous; head clothed with pale pubescence, except the front posteriorly with sparse, recumbent, dark fulvous hairs; thorax clothed with sparse, pale pubescence, except the dorsum with sparse, recumbent and erect, pale fulvous hairs; abdominal sternites with sparse, pale pubescence, the tergites for the most part with black pubescence, the pale pubescent markings as follows : a complete, posterior marginal band on the first tergite; second tergite with a pair of lateral stripes extending from the anterior margin to the transverse midline and a broad, posterior marginal band, the anterior margin of the latter sinuate; tergites three to five each with a pair of transverse spots extending to the lateral margins, those on tergite five coalescing medially; mandibles edentate at the tip; antennal scrobes carinate above; thorax distinctly broader posteriorly than anteriorly; dorsum of thorax slightly contracted at the mesonotal area, the lateral margins crenulate; mesonotal-scutellar suture distinct; scutellar scale present; lateral margins of posterior face of propodeum distinctly dentate; posterior face of propodeum at right angles to the dorsum; sides of propodeum with small, scattered, indistinct punctures; second tergite with moderate punctures visible through the pubescence and closely interspersed with fine punctures; pygidial area longitudinally striate; first sternite with a median, longitudinal carina on the anterior half; second sternite with moderate, scattered punctures; calcaria pale. Length, 7 mm.

Male. Head, thorax, first abdominal segment and legs black, the remainder of the abdomen ferruginous; head, thorax and legs clothed with pale pubescence, thick and appressed on the front, genae, pronotum, dorsum of propodeum and mesopleura, except the mesonotum with sparse, black pubescence; first tergite and all the sternites with sparse, pale pubescence; remainder of the tergites with sparse, fulvous pubescence; median, glabrous area of clypeus transversely concave, the posterior, elevated margin broadly arcuate; scape bicarinate beneath; ocelli small; scutellum evenly convex and punctate throughout; enclosed area of propodeum not elevated into a tubercle posteriorly; tegulae finely punctate and clothed throughout with pale pubescence; median, impunctate area of last tergite terminating at a transverse, sharp carina, the length of the latter equal to three-fifths the width of the tergite; posterior margin of last tergite emarginate medially; seventh sternite with a pair of inconspicuous, postero-lateral tubercles; last sternite with a pair of longitudinal ridges on the anterior half, the ridges elevated posteriorly into a pair of conspicuous acute tubercles; wings pale fuscous; calcaria pale. Length, 12 mm.

Type. ♀, Guatemala : Capetillo (*Rodriguez*), in British Museum (Natural History), London.

Allotype. ♂, Mexico (*Sumichrast*), 643, taken with ♀ of *prominens* Cameron, in Muséum National d'Histoire Naturelle, Paris.

Specimens examined. 23 ♀♀, Mexico : San Rafael Jicaltepec, Vera Cruz (*Townsend*); ♀, Millan, Vera Cruz, 2.i.1918 (*Frederick Knab*); ♀, Tuxpan, Vera Cruz; 2 ♂♂, San Lucrecia, Vera Cruz (*Crawford*); 3 ♂♂, Atoyac, Vera Cruz (*Schumann*); ♀, Vera Cruz (*Höge*); ♂, Vera Cruz (*Crawford*); ♀, Omealca, Orizaba (*M. Trujillo*); 3 ♀♀, 2 ♂♂, Orizaba; ♀, Mts. near Cuernavaca, Morelos (*Crawford*); 5 ♂♂, Tuxtepec, Oaxaca, x.1933 (*Moises Fraire*); ♀, Tuxtepec, Oaxaca (*J. Camelo.* G.); ♀, Süd-Mexico, 2.ii.1888 (*C. Höge*); 12 ♀♀, 8 ♂♂, Mexico; 41 ♀♀, 14 ♂♂, Guatemala: El Rancho, elev. 900 ft., 15–18.ii.1932 (*C. N. Ainslie*); ♀, ♂, El Rancho, 20.i.1905 (*Chas. C. Deam*); ♀, Gualan, 12.i.1905 (*Chas. C. Deam*); ♀, Las Amatas (*Kellerman*); ♂, Honduras : Pto. Castilla, 21.iii.1924; ♀, ♂, Pto. Castilla, 24.iii.1924; ♀, Pto. Castilla, 27.iii.1924; 3 ♀♀, Tela, 26.iii.1932 (*C. N. Ainslie*); ♂, La Ciba (*F. J. Dyer*); ♂, Nicaragua : San Marcos; 2 ♀♀, Costa Rica : Suretka, 3.iii.1917 (*C. B. Williams*); ♀, Costa Rica (Pacific side), 1.xi.1910 (*H. Schmidt*); ♀, 2 ♂♂, without data.

The allotype male specimen was identified by André (1898) as *ardens* (Gerstaecker), but an examination of Gerstaecker's material has shown that the specimen is not at all similar to *ardens*. The female taken with the male and described by André as the female of *ardens* is the same as *prominens* (Cameron).

The female is easily recognised by the longitudinally striate pygidium and the black head; the legs and proximal segments of the antennae vary from entirely ferruginous to entirely black, and the anterior, pale pubescent stripes of the second tergite are sometimes connected by a narrow line of pale pubescence to the posterior marginal band and sometimes not. All these variations were collected at El Rancho, Guatemala, by C. N. Ainslie in February, 1932. The male is characterised by the form of the last tergite and the black first abdominal segment. *T. forreri* (Cameron) is like the male of *prominens*, except that the former has the abdomen entirely ferruginous. Both the female and male of *prominens* are closely related to *leona* Blake. The female of the latter is easily distinguished from *prominens* by its ferruginous head. The male of *leona* differs from *prominens* in having the transverse carina on the last tergite strongly arcuate and extending through only the median two-fifths of the tergite, and in having the pale pubescence on the dorsum of propodeum and tegulae sparse. *T. leona* occurs in the Mississippi valley in the United States as far north as Michigan and has been taken in Texas (Brownsville), while Blake's type of the female is labelled " Mexico." *T. prominens* is found in east central and southern Mexico, Guatemala, Honduras, Nicaragua and Costa Rica, while *forreri* which I regard as a subspecies of *prominens* is found only in western Mexico, *i.e.*, Guadalajara, Colima, Ventanas, Presidio de Mazatlan, Tepic and Matamoros.

Timulla (*Timulla*) *prominens* subsp. *forreri* (Cameron). (New combination.)

Mutilla forreri Cameron, 1894, *Biol. Centr.-Amer., Hymen.* **2** : 290, male.
Mutilla chroma Cameron, 1894, *Biol. Centr.-Amer., Hymen.* **2** : 291, male (**syn. n.**).
Mutilla chroma Dalle Torre, 1897, *Cat. Hymen.* **8** : 24, male.
Mutilla forreri Dalle Torre, 1897, *Cat. Hymen.* **8** : 41, male.
Mutilla chroma André, 1903, *Gen. Ins.* **11** : 41, n. 11, male.
Mutilla forreri André, 1903, *Gen. Ins.* **11** : 42, n. 24, male.

Type. ♂, Mexico : Presidio de Mazatlan (*Forrer*), in British Museum (Natural History), London.

The type of *chroma* Cameron is also in the British Museum (Natural History). The two types have been compared and found to be the same.

Specimens examined. 3 ♂♂, Mexico: Presidio de Mazatlan (*Forrer*); 2 ♂♂, Ventanas, Durango (*Forrer*); ♂, Matamoros (Coahuila?), 12.viii.1903; ♂, Tepic, Navarrete, vii. (*Schumann*); ♂, Guadalajara, 2.viii.1903 (*McClendon*); ♂, Colima (*L. Conradt*); ♂, Mexico.

Exactly like subsp. *prominens* except the abdomen is entirely ferruginous instead of having the first abdominal segment black.

Timulla (*Timulla*) *tyro* Mickel.

Timulla (*Timulla*) *tyro* Mickel, 1937, *Ent. Amer.* (n.s.) **17** : 25–27, male and female.

Holotype. ♂, Cat. no. 50954 U.S. National Museum, California: Imperial county, v.1911 (*J. C. Bridwell*).

Allotype. ♀, Arizona, in U.S. National Museum.

Specimens examined. ♀, Mexico: Santa Rosa, 7.xii.1894 (*C. H. T. Townsend*).

Related to *leona* (Blake).

Timulla (*Timulla*) *cyra* (Cameron). (New combination.)

Pl. 7, fig. 115, ♂; Pl. 1, fig. 8, ♀.

Mutilla cyra Cameron, 1894, *Biol. Centr.-Amer., Hymen.* **2** : 263, female.
Mutilla vanduara Cameron, 1894, *Biol. Centr.-Amer., Hymen.* **2** : 281, male (**syn. n.**).
Mutilla cyra Dalle Torre, 1897, *Cat. Hymen.* **8** : 29, female.
Mutilla vanduara Dalle Torre, 1897, *Cat. Hymen.* **8** : 95, male.
Mutilla vanduara André, 1903, *Gen. Ins.* **11** : 42, n. 66, male.
Mutilla cyra André, 1903, *Gen. Ins.* **11** : 72, n. 24, female.

The following descriptions of female and male were drawn from Cameron's types:

Female. Entirely ferruginous, except the distal half of mandibles and flagellum beyond the first segment blackish; head clothed with pale pubescence, except the posterior part of front and anterior part of vertex with sparse, black pubescence, the pale pubescence dense and appressed on the genae and posterior part of vertex, sparse elsewhere; thorax clothed with sparse, pale pubescence, except the dorsum of thorax with dense, appressed, pale pubescence at the postero-lateral angles of pronotum, and the remainder of the dorsum with sparse, dark pubescence; abdominal sternites and first tergite with sparse, pale pubescence, the remaining tergites with black pubescence and with the pale pubescent markings as follows: a complete, posterior marginal band on the first tergite; second tergite with a pair of lateral stripes extending from the anterior margin to the transverse midline, and a posterior, marginal band with a sinuate anterior margin; tergites three to five each with a pair of quadrate spots, those on the fifth tergite confluent medially on the posterior margin; legs clothed with sparse, pale pubescence; mandibles edentate at the tip; antennal scrobes carinate above; thorax slightly broader posteriorly than anteriorly; dorsum distinctly contracted medially at the mesonotal area, the lateral margins somewhat crenulate; dorsum with large, dense, confluent punctures, becoming deeper and coarser towards the propodeum, the latter somewhat asperated; mesonotal-scutellar suture indistinct; scutellar scale present, lateral margins of posterior face of propodeum dentate; sides of propodeum with small, scattered punctures, the latter becoming larger and close towards the posterior margin; second tergite finely punctate, interspersed with moderate punctures visible through the pubescence; pygidial area longitudinally rugose anteriorly, the posterior half granulate; first sternite with a median, longitudinal carina on the anterior

half, elevated posteriorly into a small tooth; second sternite with large, sparse punctures throughout; calcaria pale. Length, 10 mm.

Male. Head, thorax and legs black; abdomen entirely ferruginous; head, thorax and legs clothed with pale pubescence, thick and appressed on the front, genae, posterior part of vertex, posterior margin of pronotum, dorsum of propodeum and elevated areas of mesopleura, sparse elsewhere, except the mesonotum and anterior, median area of scutellum with sparse, black pubescence; abdomen clothed above and beneath with sparse, fulvous pubescence, except the disk of the first tergite with sparse, pale pubescence; mandibles deeply excised beneath; clypeus elevated, the elevated portion of the glabrous area perpendicular; posterior margin of glabrous area evenly arcuate; anterior margin of clypeus slightly emarginate medially; scape bicarinate beneath, the two carinae equally developed; antennal scrobes very weakly carinate above; ocelli moderate in size, the distance between the eye margins and the lateral ocelli about three times the diameter of the latter; parapsidal furrows distinct; scutellum evenly convex, not gibbose, densely punctate throughout; enclosed area of propodeum triangular, about three times as long as the width of the anterior margin, not elevated posteriorly; sides of propodeum distinctly reticulate on the posterior two-thirds; tegulae smooth, polished, the anterior and inner margins punctate and with pale pubescence; second tergite sparsely punctate to almost impunctate on the disk, with close, moderate punctures at the sides; median, impunctate area of last tergite terminating at a subtubercular prominence situated at the beginning of a depressed, concave area, the latter extending to the posterior margin and bearing a median, longitudinal carina posteriorly, the posterior margin of the tergite broadly, roundly emarginate; first sternite with a median, longitudinal carina on the anterior two-thirds; second sternite medially almost impunctate and at the sides with large, close punctures; postero-lateral tubercles on the sixth sternite lacking, on the seventh sternite distinct, the last sternite with a pair of lateral ridges on the anterior two-thirds, the ridges elevated posteriorly into a pair of long, conspicuous teeth; intermediate coxae with a very prominent tooth within at the posterior margin; calcaria pale; wings subfuscous; cell 2nd $R_1 + R_2$ distinctly truncate at the apex; cell R_5 receiving vein M_{3+4} at the middle; cell R_4 present but less distinct than R_5 and receiving vein M_2 at the middle. Length, 13 mm.

Type. ♀, Mexico: Chilpancingo, Guerrero, 4600 ft., vi. (*H. H. Smith*), in British Museum (Natural History), London.

Allotype (type of *vanduara*), ♂, Mexico: Chilpancingo (*H. H. Smith*), in British Museum (Natural History), London.

Mr. A. Earl Pritchard has taken the two sexes *in copula* at Iguala, Guerrero, Mexico. The female proved to be *cyra* and the male *vanduara*.

Specimens examined. ♂, Mexico: Atoyac, Vera Cruz (*Schumann*); ♂, Puenta d'Ixtla, 4.vii.1900 (*C. C. Deam*); ♀, Chilpancingo, Guerrero, 4600 ft., vi. (*H. H. Smith*); ♀ and ♂ (*in copula*), and ♂, Iguala, Guerrero, 30.vi.1935 (*A. Earl Pritchard*); 3 ♂♂, Santiago Iscuintla, Jalisco, vii. (*Schumann*); 2 ♂♂, San Blas, Jalisco, vii. (*Schumann*).

The female is easily recognised by the spots of dense, pale pubescence on the postero-lateral areas of the pronotum; no other female *Timulla* which I have seen is so marked. The excised mandibles, emarginate posterior margin of the last tergite, convex scutellum, sculpture of last tergite and the prominent tooth at the postero-inner angles of the middle coxae will serve to identify the male.

Timulla (Timulla) spaco sp. n.

Pl. 5, fig. 99, ♂.

Male. Head, thorax and legs black, the abdomen entirely ferruginous; head, thorax and legs clothed with pale pubescence, thick and appressed on the front below the ocelli,

posterior part of vertex, genae, broad posterior margin of pronotum, anterior margin of dorsum of propodeum and elevated area of mesopleura, the pubescence elsewhere sparse and erect, except the posterior five-sixths of the mesonotum with sparse, black pubescence; abdomen above and beneath clothed with sparse, fulvous pubescence except the disk of the first tergite with sparse, pale pubescence; mandibles deeply excised beneath; clypeus elevated posteriorly, the median, glabrous area strongly concave, its posterior margin arcuate and angled laterally; anterior margin of clypeus practically straight medially; scape bicarinate beneath, the two carinae equally developed; antennal scrobes distinctly carinate above; ocelli small, the distance between the eye margins and the lateral ocelli four and one-half times the diameter of the latter; parapsidal furrows distinct; scutellum evenly convex, not gibbose, densely confluently punctate; enclosed area of propodeum with the sides converging to a bluntly rounded apex, the latter very slightly elevated; sides of propodeum shallowly but distinctly reticulate on the posterior half; tegulae pale ferruginous on the posterior half, clothed throughout with appressed, pale pubescence; second tergite with moderate punctures throughout, close on the disk, dense at the sides; median, impunctate area terminating in a prominent, compressed tubercle; beyond the tubercle the tergite declivous, somewhat concave, the posterior margin of the tergite narrowly emarginate medially; first sternite with a median, longitudinal carina on the anterior two-thirds; second sternite with large, sparse, shallow punctures; postero-lateral tubercles on the sixth sternite obscure, on the seventh sternite small but distinct, the last sternite with a pair of anterior, lateral, prominent ridges terminating in prominent tubercles; postero-inner angles of intermediate coxae not produced into a tooth; calcaria pale; wings subfuscous; cell 2nd $R_1 + R_2$ very indistinctly truncate at the apex; cell R_5 receiving vein M_{3+4} slightly beyond the middle; cell R_4 present but less distinct than R_5 and receiving vein M_2 at the middle. Length, 11 mm.

Holotype. ♂, Republic of Honduras: Prieta, 6.iv.1924 (*J. Bequaert*), in University of Minnesota collection.

Paratype. ♂, Republic of Honduras: Prieta, 6.iv.1924 (*J. Bequaert*).

Distinct from other neotropical species by the compressed tubercle on the last tergite, the emarginate, posterior margin of the last tergite, the convex, non-gibbose scutellum, and the pubescent tegulae. Related to *cyra* (Cameron), *prominens* (Cameron) and the following species in the evenly convex scutellum, excised mandibles and emarginate, posterior margin of last tergite. Differs from those three species in the presence of the compressed tubercle at the termination of the median, impunctate area of the last tergite and in the form of the median, glabrous area of the clypeus.

Timulla (Timulla) divergens sp. n.

Pl. 7, fig. 113, ♂.

Male. Head, thorax and legs entirely black; abdomen ferruginous, except the last two segments blackish; head, thorax and legs clothed with pale pubescence, thick and appressed on lateral areas of clypeus, front anterior to median ocellus, genae, broad posterior margin of pronotum, broad anterior margin of dorsum of propodeum and elevated areas of mesopleura, sparse elsewhere, except the area immediately behind the ocelli with short, erect, fuscous hairs, and the posterior five-sixths of mesonotum as well as the median, anterior area of scutellum with sparse, black pubescence; all the abdominal sternites, the first tergite and anterior half of second tergite with sparse, pale pubescence; posterior half of second tergite and tergites three to five with short, fulvous pubescence, conspicuous and thicker at the posterior margin of each; last two tergites with sparse, fuscous pubescence; mandibles deeply excised beneath; median, glabrous area of clypeus rectangular, the posterior,

elevated margin produced at each postero-lateral angle to form a distinct, conical tooth, thus appearing bidentate; scape distinctly bicarinate beneath; antennal scrobes carinate above; ocelli small, the distance between the eye margins and the lateral ocelli four times the greatest diameter of the latter; parapsidal furrows present and complete from the anterior to the posterior margins of the mesonotum; scutellum evenly convex, not at all gibbose, with moderately large, very close punctures; dorsum and posterior face of propodeum rounded into one another, coarsely deeply reticulate; enclosed area of propodeum narrow, deep, well marked, the sides sinuate; posterior half of sides of propodeum shallowly, moderately reticulate; tegulae finely punctate and clothed throughout with pale pubescence; second tergite with a narrow, median area glabrous and impunctate, otherwise with moderately large, distinct punctures becoming smaller and closer laterally, except the broad, slightly depressed, posterior margin with small punctures; median, impunctate area of last tergite terminating at the origin of a pair of longitudinal, diverging carinae; posterior margin of last tergite deeply emarginate medially; first sternite with a median, longitudinal carina on the anterior two-thirds; second sternite sparsely punctured medially, the lateral areas with large, elongate, separated punctures; postero-lateral angles of sixth sternite with very small, almost obsolete tubercles; postero-lateral tubercles of seventh sternite small but distinct; anterior half of last sternite with a pair of lateral ridges converging towards the rear; postero-inner angles of intermediate coxae not produced into a tooth; calcaria pale; wings fuscous throughout; cell 2nd $R_1 + R_2$ subtruncate distally, almost rounded; cell R_5 receiving vein M_{3+4} slightly beyond the middle; cell R_4 present but less distinct than R_5 and receiving vein M_2 slightly beyond the middle; vein m-cu terminating distinctly anterior to vein $M_4 + Cu_1$. Length, 13 mm.

Holotype. ♂, Cat. no. 52126 U.S. National Museum, Mexico : Tuxtepec, Oaxaca (*J. Camelo*).

Related to *spaco*, the previous species. Both have the tegulae clothed throughout with pale pubescence and both have the intermediate coxae simple, without a tooth. Differs from *spaco* in the form of the clypeus, the form of the last tergite, and the last two segments of the abdomen blackish.

Timulla (*Timulla*) *scoparia* (Gerstaecker).

Pl. 1, fig. 9, ♀.

Mutilla lineola Gerstaecker, 1874, *Arch. Naturg.* **40** : 300, female (in part, Cayenne specimen) (*nec* Fabricius).
Mutilla scoparia Gerstaecker, 1874, *Arch. Naturg.* **40** : 322, male.
Mutilla scoparia Dalle Torre, 1897, *Cat. Hymen.* **8** : 84, male.
Mutilla scoparia André, 1903, *Gen. Ins.* **11** : 42, n. 57, male.
Timulla (*Timulla*) *scoparia* Mickel, 1937, *Rev. Ent. Rio* **7** : 175, male.

Lectotype and paratype. 2 ♂♂, no. 6567, Brazil : Salto Grande, in Zoologisches Museum der Universität, Berlin.

The female heretofore undescribed is as follows :

Female. Head black, except the mandibles proximally, the antennal tubercles, the scape, pedicel and first segment of flagellum ferruginous; thorax entirely ferruginous; abdomen mostly blackish, the first segment and the venter dark ferruginous; legs black, except the tarsi tinged with ferruginous; head clothed with sparse, pale pubescence except the front and most of the vertex with sparse, black pubescence, the vertex also with a pair of distinct, subtriangular, appressed, pale pubescent spots; thorax clothed with sparse, pale pubescence except the dorsum with sparse, ferruginous pubescence; abdomen beneath with sparse, pale pubescence, not much thicker at the posterior margin of the sternites; abdominal tergites mostly black pubescent, the pale pubescent markings as follows: a

narrow, posterior marginal band, broadly interrupted medially, on the first tergite; second tergite with a pair of moderately broad, longitudinal stripes, narrowed and weakly interrupted posteriorly before uniting with a narrow, posterior marginal band, the latter distinctly complete in certain lights, in others with a fuscous spot medially; tergites three to five each with a pair of elongate, rectangular spots except those on tergite three shorter and almost subtriangular; tergite five with the spots widely separated; antennal scrobes carinate above; thorax equal in width anteriorly and posteriorly; lateral margins of dorsum of thorax shallowly emarginate at the mesonotal area; scutellar scale present and distinct; mesonotal-scutellar suture distinct; lateral margins of posterior face of propodeum denticulate posteriorly; sides of propodeum with sparse, distinct, moderately small punctures; second tergite with moderate, distinct punctures visible through the pubescence and closely interspersed with fine punctures; anterior half of pygidium very weakly, longitudinally rugose, the posterior half glabrous, unsculptured; second sternite with large, distinct, close punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 8 mm.

Allotype. ♀, Brazil : Campinas, iii.1924 (*F. X. Williams*), in University of Minnesota collection.

Specimens examined. ♂ and ♀ (*in copula*), Brazil : Ypirango, São Paulo, iii.1907 (*H. Lüderwaldt*); 2 ♂♂, 1 ♀, Ypirango, São Paulo, i.1900 (*C. Schrottky*), i.1907 (*H. Lüderwaldt*), and iv.1909 (*H. Lüderwaldt*); 3 ♂♂, 1 ♀, Campinas, iii.1924 (*F. X. Williams*); ♀, Butantan, São Paulo, 15.v.1920 (*R. Fischer*); 2 ♀♀, Rio Grande de Sul; ♂, Paraguay : Villa Encarnacion, 4.xi.1904; ♀, San Bernardino (*Fiebrig*); ♂, Paraguay; ♂, Argentine Republic : Granja, Sierra Chica, Cordoba, 7.ii.1922 (*Jos. Hubrich*); 2 ♀♀, Brazil : Vaccaria, Matto Grosso, xii.1922 (*J. Lane*); ♀, Cayenne??.

The male has the clypeus produced at the middle posteriorly into a narrow prominence which is blunt and rounded at the tip; only the second and third abdominal segments are ferruginous. The Campinas males were compared with Gerstaecker's type. The pale pubescent pattern of the second abdominal tergite of the female varies in its completeness; most of the specimens have the posterior marginal band complete, with a median, fuscous spot visible in certain lights; one specimen from São Paulo, Brazil, two from Matto Grosso, Brazil, and the one from Paraguay have the posterior band narrowly, but distinctly, interrupted medially; in some the longitudinal stripes are entire and in others weakly to distinctly interrupted just anterior to the posterior band.

The specimen recorded by Gerstaecker from Cayenne as *lineola* is exactly the same as the above females and since this species seems definitely limited in distribution to southern Brazil, Paraguay and northern Argentine Republic, it seems likely that the label " Cayenne " is an error.

Timulla (*Timulla*) *gastrica* (Gerstaecker). (New combination.)

Mutilla gastrica Gerstaecker, 1874, *Arch. Naturg.* **40** : 322, male.
Mutilla gastrica Dalle Torre, 1897, *Cat. Hymen.* **8** : 43, male.
Mutilla gastrica André, 1903, *Gen. Ins.* **11** : 42, n. 26, male.

Type. ♂, no. 21057, Brazil : Salto Grande (*Sello*), in Zoologisches Museum der Universität, Berlin.

Only the unique type seen. Very similar to *scoparia* but differs in the form of the clypeus and the colour of the thick pubescence on the front, pronotum, propodeum and mesopleura as indicated in the key.

Timulla (Timulla) punctulata sp. n.

Pl. 1, fig. 10, ♀.

Male. Head, thorax, first and last abdominal segments, and legs black, the remaining abdominal segments ferruginous, except the fourth and fifth somewhat infuscated; head and thorax clothed with sparse pale pubescence, except the mesonotum and anterior area of the scutellum with sparse, black pubescence, and the front, pronotum, dorsum of propodeum and elevated areas of mesopleura with the pale pubescence also thick and appressed; abdominal tergites all clothed with fulvous pubescence, the sternites with sparse, pale pubescence; mandibles strongly excised beneath; median, glabrous area of clypeus elevated posteriorly and reflexed forming a blunt prominence; antennal scrobes carinate above; scape distinctly bicarinate beneath; first and second flagellar segments equal in length; ocelli small, the distance between the eye margins and the lateral ocelli equal to three and one-half times the greatest diameter of the latter; parapsidal furrows present and deep on posterior two-thirds of mesonotum; scutellum gibbose; enclosed area of propodeum with the sides subparallel, slightly narrower anteriorly than posteriorly; posterior face of propodeum slightly elevated and separated from the dorsum by an irregular carina; tegulae glabrous, impunctate except the anterior and inner margins punctate and pale pubescent; posterior margin of first abdominal tergite ferruginous; second tergite with small, distinct punctures throughout interspersed with fine punctures except a narrow, median, longitudinal line glabrous, impunctate; median, impunctate area of last tergite broadly emarginate posteriorly when viewed from above; posterior area of tergite beyond the elevated, emarginate prominence distinctly concave, a median, longitudinal carina extending almost the length of the concave area to the posterior margin of tergite; second sternite with large, distinct punctures, closer at the sides than medially; sixth and seventh sternites with small, obscure, postero-lateral tubercles; last sternite with a pair of weak lateral ridges on the anterior half; legs entirely black, clothed with pale pubescence; calcaria pale; proximal half of wings subhyaline, the distal half fuscous; cell 2nd $R_1 + R_2$ subtruncate distally; cell R_5 receiving vein M_{3+4} slightly beyond the middle; cell R_4 present but less distinct than R_5 and receiving vein M_2 slightly beyond the middle. Length, 11 mm.

Female. Head, abdomen and legs black, except the abdomen beneath dark ferruginous; thorax entirely ferruginous; antennal tubercles, scape, pedicel and first flagellar segment ferruginous; antennal scrobes carinate above; vertex with a pair of subtriangular, pale pubescent spots posteriorly; lateral margins of dorsum of thorax slightly, but distinctly emarginate at the mesonotal area; scutellar scale present and well developed; lateral margins of posterior face of propodeum weakly denticulate; sides of propodeum with sparse, small, distinct punctures; lateral margins of second, third and fourth tergites pale pubescent; pale pubescent pattern of abdominal tergites as follows: a complete, posterior marginal band on the first tergite; second tergite with a pair of narrow, longitudinal stripes complete from the anterior to the posterior margins and a narrow, complete, posterior marginal band; tergites three to five each with a pair of elongate, subrectangular spots, those on tergite five widely separated; second tergite with moderate, distinct punctures visible through the pubescence and closely interspersed with fine punctures; anterior two-thirds of pygidial area irregularly rugose, the posterior third subglabrous; second sternite with moderately large, distinct punctures; legs black, except the tibiae and tarsi very dark ferruginous, clothed with sparse, pale pubescence; calcaria pale. Length, 8 mm.

Holotype and allotype. ♂ and ♀ respectively (*in copula*), Argentine Republic: Las Garzas, Bords du Rio Las Garzas, 25 kil. à l'o. d'Ocampo, Chaco de Santa Fé, 18.xii. (*E. R. Wagner*), in Muséum National d'Histoire Naturelle, Paris.

Paratypes. ♀, Argentine Republic: Las Garzas, Bords du Rio Las

Garzas, 25 kil. à l'o. d'Ocampo, Chaco de Santa Fé; 4 ♀♀, Estancia la Noria, Rio San Javier, Santa Fé, 22.xii.1911, 4.i.1912, and 25.i.1912 (*G. E. Bryant*); ♂ and ♀ (*in copula*), Alvear near Rosario, Santa Fé, 30.xii.1918, on flowers of *Parkinsonia aculeata* (*Jos. Hubrich*); ♂, Saladillo near Rosario, Santa Fé, 3.i.1919 (*Jos. Hubrich*); 3 ♀♀, Estancia Geraldina, Chaco-Pampa, Cordoba (*Jos. Hubrich*); 2 ♂♂, Cordoba; ♂, Argentine Republic; ♂, without locality label but undoubtedly Argentine Republic.

The male is related to *scoparia* (Gerstaecker), but differs in having only the first and last abdominal segments black, in having all the tergites clothed with fulvous pubescence, and in the close punctation of the second tergite with small and fine, distinct punctures interspersed. The holotype male has the fourth and fifth segments somewhat infuscated and one other specimen shows this tendency, but the other males have those segments entirely ferruginous. The female is very close to *odice*, but differs principally in having the anterior two-thirds of the pygidial area irregularly rugose instead of longitudinally rugose as in *odice*. The scape, pedicel and first flagellar segment vary from ferruginous to black in the various female specimens. The males vary in length up to 14 mm., the females up to 10 mm.

Timulla (Timulla) balteata sp. n.

Pl. 6, fig. 103, ♂.

Male. Head, thorax, first and last two abdominal segments, and legs black; abdominal segments two to five ferruginous, the fifth somewhat infuscate; proximal fifth of first flagellar segment pale yellow; head, thorax and legs clothed with sparse, pale pubescence, except the mesonotum and median, anterior area of scutellum with sparse, black pubescence, and the front, pronotum posteriorly, dorsum of propodeum and elevated areas of mesopleura with thick, appressed, pale pubescence; pubescent fringes at posterior margin of the abdominal tergites blackish, appearing fulvous in certain lights; mandibles only moderately excised beneath, the tooth formed by the excision small and not prominent; median, glabrous area of clypeus strongly elevated posteriorly, the face broad and the elevated, posterior margin evenly arcuate; scape bicarinate beneath but the anterior carina sharper and stronger; first and second flagellar segments equal; antennal scrobes carinate above; ocelli small, the distance between the eye margins and the lateral ocelli equal to four times the greatest diameter of the latter; parapsidal furrows present and deep on posterior two-thirds of mesonotum; scutellum gibbose; dorsum of propodeum short; posterior face of propodeum only slightly elevated and indistinctly separated from the dorsum; tegulae glabrous, impunctate, except the anterior and inner margins punctate and pale pubescent; emargination at posterior terminus of median, impunctate area of last tergite very broad, its width equalling half the width of the tergite at that point; tergite beyond the emargination concave and with a median, longitudinal carina extending to the posterior margin; postero-lateral tubercles on sixth and seventh sternites distinct; lateral ridges on anterior half of last sternite well developed and terminating posteriorly in a distinct tooth; calcaria pale; proximal half of wings subhyaline, the distal half fuscous; cell 2nd $R_1 + R_2$ subtruncate distally; cell R_5 receiving vein M_{3+4} slightly beyond the middle; cell R_4 present but less distinct than R_5 and receiving vein M_2 slightly beyond the middle. Length, 12 mm.

Holotype and two paratypes. 3 ♂♂, Brazil: Goyaz. Holotype in Muséum National d'Histoire Naturelle, Paris.

Related to *scoparia* but has the mandibles less strongly excised than other species in this group, the posterior, elevated face of clypeus broad and with a rounded, posterior margin, the dorsum of propodeum short, the emargination

at terminus of impunctate area of last tergite very broad, the tubercles and lateral ridges on the sixth, seventh and last sternites well developed, the abdomen more ferruginous and the first flagellar segment yellow proximally.

Timulla (*Timulla*) *terminalis* (Gerstaecker).

Mutilla terminalis Gerstaecker, 1874, *Arch. Naturg.* **40** : 323, male.
Mutilla terminalis Dalle Torre, 1897, *Cat. Hymen.* **8** : 91, male.
Mutilla escada Cresson, 1902, *Trans. Amer. ent. Soc.* **28** : 60, male (**syn. n.**).
Mutilla escada André, 1903, *Gen. Ins.* **11** : 42, n. 19, male.
Mutilla terminalis André, 1903, *Gen. Ins.* **11** : 42, n. 63, male.
Timulla (*Timulla*) *terminalis* Mickel, 1937, *Rev. Ent. Rio* **7** : 174, male.

Type. ♂, no. 21062, Brazil : Santos (*Sello*), in Zoologisches Museum der Universität, Berlin.

The type of *escada* Cresson is in the Carnegie Museum, Pittsburg, Pa.

Paratype. ♂, Brazil : Rio de Janeiro, in collection of University of Halle.

Specimens examined. ♂, Brazil : Nictheroy, Rio de Janeiro, 15.x.1919; ♂, Rio de Janeiro; 2 ♂♂, Santa Thereza-Gebirge, Rio de Janeiro, 19.i.1929 and i.1929 (*O. Conde*); ♂, Santa Thereza, Espirito Santo, vii.1928 (*O. Conde*); ♂, Santa Catharina; 2 ♂♂, Santos, 15.iii.1894 and 8.v.1894 (*Brauns*); ♂, Guaraja, São Paulo, 2.xii.1919; 3 ♂♂, Brazil.

Related to *punctulata* and *scoparia*, but differs from most other males in this group in the tegulae being punctate and black pubescent throughout. The median, glabrous area of clypeus has the median, posterior angle elevated and recurved but not prominent; the median, impunctate area of last tergite is dilated posteriorly so that the emargination of the elevation is very broad and shallow; abdomen ferruginous, except the first (excluding the posterior margin) and last segments black, the ferruginous areas with fulvous pubescence. The types of both *terminalis* and *escada* have been studied and found to be identical. This may be the male of *odice* as several of the specimens of each species were collected at the same time and place.

Timulla (Timulla) odice sp. n.

Mutilla phalerata Burmeister, 1875, *Bol. Acad. nac. Ci. Cordova* **1** : 497, female only, not male (*nec* Klug).
Mutilla phalerata Cresson, 1902, *Trans. Amer. ent. Soc.* **28** : 17, female (in part, Rio de Janeiro specimen) (*nec* Klug).

Female. Head, abdomen and legs black, the thorax and antennal tubercles ferruginous; vertex with a pair of subtriangular, pale pubescent spots posteriorly; first and second tergites each with a narrow, posterior marginal, pale pubescent band, the second tergite also with a pair of narrow, longitudinal, pale pubescent stripes extending from the anterior to the posterior margins; tergites three to five each with a pair of pale pubescent spots, those on tergite three subtriangular, those and tergites four and five linear, rectangular; antennal scrobes carinate above; thorax very slightly broader posteriorly than anteriorly; lateral margins of dorsum of thorax slightly but distinctly emarginate at the mesonotal area; scutellar scale present and well developed; sides of propodeum with sparse, fine punctures; second tergite with moderate, separated punctures visible through the pubescence and closely interspersed with fine punctures; anterior two-thirds of pygidial area longitudinally rugose, almost striate; legs clothed with sparse, pale pubescence; calcaria pale. Length, 8 mm.

Holotype. ♀, Brazil : Rezende, Estado de Rio, iii.1924 (*F. X. Williams*), in University of Minnesota collection.

Paratypes. 2 ♀♀, Brazil: Nictheroy, Rio de Janeiro, 15.x.1919; ♀, Porto das Caixas, Fazenda Macacu, Rio de Janeiro, 13.i.1928 (*O. Conde*); ♀, Tijuca (Rio), xii.1884; ♀, Novo Friburgo; 3 ♀♀, Rio de Janeiro; ♀, Santa Thereza, Espirito Santo, xi.1928 (*O. Conde*); ♀, Santos, 25–30.v.; ♀, Santos, 4.iii.1912 (*G. E. Bryant*); 4 ♀♀, Santos, 23.iii.1912 (*G. E. Bryant*); ♀, Guaruja, Ilha Santo Amara, 30.iii.1912 (*G. E. Bryant*); ♀, Bahnstation, Raiz de Serra, São Paulo, xii.1907 (*H. Lüderwaldt*); 2 ♀♀, Alto da Serra, São Paulo; ♀, Las Palmas (*Fricse*); ♀, Ilha Grande, 7.x.1893 (*Brauns*); ♀, Minas Geraes; 2 ♀♀, Brazil (*v. Olfers*); 10 ♀♀, Brazil; ♀, Argentine Republic: Tiju-Cuare near San Ignacio, Haut Parana.

Closely related to *punctulata* and differs principally in the pygidium being longitudinally rugose anteriorly rather than irregularly rugose. The abdominal pale pubescent pattern is almost exactly like *punctulata*. This species has been misidentified as *phalerata* Klug in many collections. I have examined the female which Burmeister (1875) recorded as *phalerata* and the Rio de Janeiro specimen which Cresson (1902) recorded as *phalerata* and find both of them to be specimens of *odice*. This may be the female of the preceding species *terminalis* which has almost exactly the same geographical range.

Timulla (Timulla) hercyna sp. n.

Mutilla rectangulum André, 1913, *Mission Service Geog. l'Armée* **10** (1): 1, female (in part) (*nec* Spinola).

Female. Head, abdomen and legs black, except the mandibles proximally, the antennal tubercles and the tip of the scape, ferruginous; thorax entirely ferruginous; head clothed with sparse, pale pubescence except the front and vertex with sparse, black pubescence, the vertex also with a pair of posterior, subtriangular spots of pale, appressed pubescence; thorax clothed with sparse, pale pubescence, except the dorsum with sparse, dark hairs; abdomen beneath clothed with sparse, pale pubescence, thicker at the posterior margins of the sternites; abdominal tergites mostly black pubescent, the pale pubescent markings as follows: a complete, posterior marginal band on the first tergite; second tergite with a pair of narrow, longitudinal stripes extending from the anterior to the posterior margins, and a narrow, posterior marginal band; tergites three to five each with a pair of elongate, rectangular spots, those on tergite five widely separated; antennal scrobes not carinate above; thorax not broader posteriorly than anteriorly; lateral margins of dorsum of thorax distinctly, shallowly emarginate at the mesonotal area; scutellar scale broad and distinct; mesonotal-scutellar suture very distinct; lateral margins of posterior face of propodeum denticulate; sides of propodeum with small, sparse punctures; second tergite with moderate, distinct punctures visible through the pubescence and closely interspersed with fine punctures; anterior half of pygidial area longitudinally rugose, the posterior half very weakly granulate, almost glabrous; second sternite with moderately large, distinct punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 7 mm.

Holotype. ♀, Brazil: Cochimbo, Bahia (*Ch. Pujol*), 1890, in Muséum National d'Histoire Naturelle, Paris.

Paratype. ♀, Ecuador: Loja.

Related to *odice*; differs in having elongate, rectangular spots on the third tergite and less well-developed, pale pubescent spots on the vertex. Superficially resembles *rectangulum* (Spinola), but differs in the pygidium being longitudinally rugose anteriorly, almost unsculptured posterior, and the sparsely punctured sides of propodeum. The pale pubescent pattern of the abdominal tergites is the same as in *livilla*.

There is some question in my mind as to the correctness of the above locality

labels. No other species of *Timulla* is known to have such a wide distribution as the labels indicate, but the specimens appear identical under critical examination. Which, if either, of the locality labels is erroneous it is not possible to say.

Timulla (Timulla) dapsilis sp. n.

Female. Head and legs black, except mandibles proximally, antennal tubercles, scape and tarsi more or less ferruginous; thorax and abdomen ferruginous, except the last three segments of abdomen more or less infuscated; head clothed with sparse, pale pubescence, except the front and vertex with sparse, black pubescence and the vertex with a pair of inconspicuous, subtriangular, pale, appressed pubescent spots; thorax clothed with pale pubescence, except the dorsum with sparse, ferruginous pubescence; abdomen beneath clothed with sparse, pale pubescence, thicker at the posterior margin of the sternites; abdominal tergites clothed for the most part with sparse, black pubescence not obscuring the ferruginous ground colour, the pale pubescent markings as follows: a complete, posterior marginal band on the first tergite; second tergite with a pair of narrow, longitudinal stripes extending from the anterior to posterior margins and a complete narrow, posterior marginal band, the anterior margin of the latter straight; tergites three to five each with a pair of elongate, rectangular spots, those on tergite five widely separated; antennal scrobes carinate above; thorax not broader posteriorly than anteriorly; lateral margins of dorsum of thorax shallowly emarginate at the mesonotal area; scutellar scale present and distinct; mesonotal-scutellar suture not determinable due to pinning of specimen; lateral margins of posterior face of propodeum denticulate; sides of propodeum with sparse, small punctures; second tergite with moderately large, distinct, close punctures visible through the pubescence and interspersed with fine punctures; anterior half of pygidial area longitudinally rugose, the posterior half glabrous, unsculptured; second sternite with moderately large, distinct punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 7 mm.

Holotype. ♀, Brazil (*Perty*), in Zoologisches Staatssammlung, Munich.

Paratype. ♀, Brazil: Pernambuco, 2.iii.1899 (*E. Ohaus*), in Zoologisches Museum der Universität, Berlin.

Related to *odice* and *hercyna*, but differs from both in the ferruginous abdomen and more strongly punctured, second tergite. The thorax of the holotype appears narrower posteriorly than anteriorly because in pinning the prothoracic area has split and spread apart. The anterior and posterior widths of thorax in undamaged specimens is undoubtedly the same. *T. dapsilis* is a manuscript name used by Perty for this species. The pale pubescent pattern of the abdominal tergites is the same as in *livilla*, the following species.

Timulla (Timulla) livilla sp. n.

Pl. 1, fig. 11, ♀.

Female. Head, abdomen and legs black, except mandibles proximally, antennal tubercles, tip of scape, and pedicel, ferruginous; thorax entirely ferruginous; head clothed with sparse, pale pubescence, except the front and vertex with sparse, black pubescence; thorax clothed with sparse, pale pubescence, except the dorsum with sparse, ferruginous pubescence; abdomen beneath clothed with sparse, pale pubescence, thicker at the posterior margin of the sternites; abdominal tergites clothed for the most part with black pubescence, the pale pubescent markings as follows: a complete, posterior marginal band on the first tergite; second tergite with a pair of narrow, longitudinal stripes extending from the anterior to the posterior margins and a narrow, complete, posterior marginal band; tergites three to five each with a pair of elongate, rectangular spots, those on tergite five

widely separated; antennal scrobes carinate above; thorax slightly broader posteriorly than anteriorly; lateral margins of dorsum of thorax very distinctly emarginate at the mesonotal area; scutellar scale present and distinct; mesonotal-scutellar suture very distinct; lateral margins of posterior face of propodeum denticulate; sides of propodeum with sparse, fine punctures, appearing almost impunctate; second tergite with moderate punctures visible through the pubescence and closely interspersed with fine punctures; pygidial area longitudinally rugose on the anterior two-thirds, strongly granulate on the posterior third; second sternite with moderately large, distinct punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 8 mm.

Holotype. ♀, Cat. no. 52127 U.S. National Museum, Brazil: Carnaubeiras, near Natal (*W. M. Mann*).

Paratype. ♀, Brazil: Carnaubeiras, near Natal (*W. M. Mann*).

Related to *odice* and *hercyna*. Differs from both in lacking pubescent spots on the vertex, in the fine, sparse punctation of the sides of propodeum, and the strongly granulate, posterior third of the pygidium; also differs from *odice* in having the pale pubescent spots of the third tergite distinctly rectangular and elongate.

Timulla (Timulla) togatula sp. n.

Male. Head, thorax, first and last abdominal segments, and legs entirely, black, the remainder of the abdomen ferruginous; head, thorax and legs clothed with sparse, pale pubescence, except the mesonotum and anterior, median area of scutellum with sparse, black pubescence, the front, pronotum posteriorly, dorsum of propodeum anteriorly and elevated areas of mesopleura with thicker, appressed, pale pubescence; abdominal tergites clothed with fulvous pubescence; mandibles strongly excised beneath; median, glabrous area of clypeus elevated posteriorly, the elevated area subtriangular and reflexed posteriorly with the median, posterior angle truncate; scape distinctly bicarinate beneath; first and second flagellar segments equal in length; antennal scrobes carinate above; ocelli small, the distance between the eye margins and the lateral ocelli equal to three and one-half times the greatest diameter of the latter; parapsidal furrows present and deep on posterior two-thirds of mesonotum; scutellum gibbose; posterior face of propodeum slightly but distinctly elevated and separated from the dorsum by an irregular carina; enclosed area of propodeum broad, about three times as long as broad; tegulae with small, sparse punctures throughout and sparsely clothed with pale pubescence; posterior margin of first tergite ferruginous and clothed with fulvous pubescence; median, impunctate area of last tergite much broader posteriorly than anteriorly, the emargination of the impunctate area broad, equal to half the width of the tergite; tergite beyond the emargination concave and with a median, longitudinal carina extending to the posterior margin; postero-lateral tubercles of sixth and seventh sternites weakly developed; last sternite with a pair of moderate, lateral ridges on the anterior half, the ridges terminating in a dentiform tubercle; calcaria pale; proximal half of wings subhyaline, the distal half fuscous; cell 2nd $R_1 + R_2$ subtruncate distally; cell R_5 receiving vein M_{3+4} distinctly beyond the middle; cell R_4 present but less distinct than R_5 and receiving vein M_2 distinctly beyond the middle. Length, 10 mm.

Holotype. ♂, Brazil: Morrode Para, Bahia, 6.xii.1907, in Carnegie Museum, Pittsburg, Pa.

Closely related to *terminalis* (Gerstaecker), but differs in having the tegulae clothed with pale pubescence; the enclosed area of propodeum is distinctly broader than in *terminalis* as indicated in the key, and the posterior median angle of the elevated area of clypeus is squarely truncate in *togatula* instead of rounded as in *terminalis*.

Timulla (Timulla) sulcata sp. n.

Pl. 9, fig. 134, ♂.

Male. Head, thorax, last abdominal segment and legs, black, the remainder of the abdomen ferruginous and clothed with fulvous pubescence; head and thorax clothed with sparse, pale pubescence, except the mesonotum and anterior, median area of scutellum clothed with sparse, black pubescence, the front, posterior margin of pronotum, dorsum of propodeum and elevated areas of mesopleura with the pale pubescence thick and appressed; mandibles strongly excised beneath; clypeus transversely elevated anteriorly and the posterior half entirely elevated forming a deep, transverse groove between the anterior and posterior elevated portions; scape distinctly bicarinate beneath; first and second flagellar segments equal in length; antennal scrobes carinate above; ocelli small, the distance between the eye margins and the lateral ocelli equal to four times the greatest diameter of the latter; parapsidal furrows present and deep on the posterior two-thirds of mesonotum; scutellum gibbose; posterior face of propodeum slightly elevated and separated from the dorsum by an irregular carina; tegulae with fine punctures and pale pubescence throughout; disk of second tergite with sparse, moderate, distinct punctures, the posterior fourth finely punctate; median, impunctate area of last tergite terminating at a broadly emarginate elevation, the posterior third of the impunctate area depressed medially and longitudinally forming a broad groove, thus the lateral angles of the emarginate tip of the impunctate area prominent; last tergite beyond the emargination depressed medially and with a median, longitudinal carina extending to the posterior margin of the tergite; sixth and seventh sternites with weak, postero-lateral tubercles; last sternite with weak, lateral ridges on the anterior half; calcaria pale; wings subfuscous with a broad outer marginal dark band; cell 2nd $R_1 + R_2$ truncate distally; cell R_5 receiving vein M_{3+4} distinctly before the middle; cell R_4 present but less distinct than R_5 and receiving vein M_2 beyond the middle. Length, 14 mm.

Holotype. ♂, Bolivia : Buenavista, near Santa Cruz, 1925 (*J. Steinbach*), in Cornell University collection, Ithaca, N.Y.

Paratypes. ♂, Bolivia : Prov. Sara, Dep. Santa Cruz (*J. Steinbach*); ♂, Paraguay : San Bernardino (*K. Fiebrig*).

Related to *terminalis*, but differs in having the median, posterior portion of the impunctate area of last tergite depressed, in the form of the clypeus with its distinct, anterior, transverse groove, and in the ferruginous first abdominal segment.

Timulla (Timulla) lavinia sp. n.

Male. Head, thorax and legs excepting the tarsi, black; the abdomen entirely, anterior tarsi more or less, and intermediate and posterior tarsi entirely, ferruginous; abdomen above clothed with fulvous pubescence; head and thorax clothed with sparse, pale pubescence, except the mesonotum and anterior, median area of mesonotum with sparse, black pubescence, the front, pronotum posteriorly, dorsum of propodeum and elevated areas of mesopleura with thick, appressed, pale pubescence; mandibles strongly excised beneath; clypeus elevated posteriorly, the elevated face broad and very slightly angulate medially, the median, posterior margin not reflexed; scape distinctly bicarinate beneath; first and second segments of flagellum equal in length; antennal scrobes carinate above; ocelli small, the distance between the eye margins and the lateral ocelli equal to three and one-half times the greatest diameter of the latter; parapsidal furrows present and deep on the posterior two-thirds of mesonotum; scutellum gibbose; posterior face of propodeum slightly elevated and separated from the dorsum of propodeum by an irregular carina; tegulae finely punctate and pale pubescent throughout; second tergite with moderate punctures,

sparse medially, closer laterally and posteriorly but without fine punctures throughout; surface of median, impunctate area of last tergite convex throughout, not depressed posteriorly, terminating posteriorly at a broad, shallow emargination; posterior area of last tergite beyond the emargination concave and with a median, longitudinal carina extending to the posterior margin of the tergite; postero-lateral tubercles of sixth and seventh sternites very weak and obscure; last sternite with weak, lateral ridges on the anterior half; legs clothed with pale pubescence; calcaria pale; proximal half of wings subfuscous, the distal half fuscous, without an outer marginal band; cell 2nd $R_1 + R_2$ subtruncate distally; cell R_5 receiving vein M_{3+4} at the middle; cell R_4 present but less distinct than R_5 and receiving vein M_2 distinctly beyond the middle. Length, 12 mm.

Holotype. ♂, Cat. no. 52128 U.S. National Museum, ARGENTINE REPUBLIC: Tucuman, 28.xii.1928 (*H. A. Jaynes*).

Paratype. ♂, ARGENTINE REPUBLIC: Prov. Salta, 1200 m.

Related to *terminalis* (Gerstaecker), but differs in having the abdomen entirely ferruginous, in the ferruginous, intermediate and posterior tarsi, and the pale pubescence of the tegulae. Also similar to *sulcata* but does not have the clypeus transversely grooved anteriorly, has the abdomen entirely ferruginous, the tarsi ferruginous, the median, impunctate area of last tergite convex throughout and not depressed at the middle posteriorly, and does not have a dark band at the outer margin of the wings.

Timulla (Timulla) merita sp. n.

Male. Head, thorax and legs entirely black, the abdomen entirely ferruginous and clothed with fulvous pubescence; head, thorax and legs clothed with sparse, pale hairs, except the mesonotum and anterior, median area of scutellum with sparse, black pubescence, the front, posterior margin of pronotum, dorsum of propodeum and elevated areas of mesopleura also with thick, appressed, pale pubescence; mandibles strongly excised beneath; median, glabrous area of clypeus elevated posteriorly, broad, the posterior, elevated margin broadly arcuate; scape distinctly bicarinate beneath; first and second segments of flagellum equal in length; antennal scrobes carinate above; ocelli small, the distance between the eye margins and the lateral ocelli equal to three and one-half times the greatest diameter of the latter; parapsidal furrows present and deep on posterior two-thirds of mesonotum; scutellum gibbose; posterior face of propodeum not distinctly elevated and separated from dorsum of propodeum; tegulae finely punctate and pale pubescent throughout; posterior fourth of second tergite finely, obscurely punctate in addition to the moderate, distinct punctures; median, impunctate area of last tergite evenly convex throughout, the middle not depressed posteriorly and the posterior margin of the area broadly, shallowly emarginate, the tergite beyond the emargination concave and with a median, longitudinal carina extending to the posterior margin; postero-lateral tubercles of sixth and seventh sternites very weak and obscure; last sternite with weak, lateral ridges on the anterior half; calcaria pale; proximal half of wings subfuscous, the distal half fuscous, without an outer marginal band; cell 2nd $R_1 + R_2$ truncate distally; cell R_5 receiving vein M_{3+4} at the middle; cell R_4 present but less distinct than R_5 and receiving vein M_2 at the middle.

Holotype. ♂, BOLIVIA: Santa Cruz (*Steinbach*), in Museum of Comparative Zoology, Cambridge, Mass.

Related to *lavinia*, but differs in having the posterior, elevated margin of the clypeus broadly and evenly arcuate, without any trace of a median angle, and also has the tarsi as well as the other segments of the leg entirely black.

Timulla (*Timulla*) *rectangulum* (Spinola).

Pl. 1, fig. 12, ♀.

Mutilla rectangulum Spinola, 1841, *Ann. Soc. ent. Fr.* **10** : 91, female.
Mutilla rectangulum Dalle Torre, 1897, *Cat. Hymen.* **8** : 77, female.
Mutilla rectangulum André, 1903, *Gen. Ins.* **11** : 42, n. 52, female.
Mutilla rectangulum André, 1913, *Mission Service Geog. l'Armée* **10** (1) : 1, female (in part).
Timulla (*Timulla*) *rectangula* Mickel, 1937, *Rev. Ent. Rio* **7** : 167, female.

The male heretofore undescribed is as follows :

Male. Head, thorax, first and last abdominal segments, and legs, entirely black, the remainder of the abdomen ferruginous; head, thorax and legs clothed with sparse, pale pubescence, except the mesonotum and anterior, median area of scutellum with sparse, black pubescence, and the front, pronotum posteriorly and elevated areas of mesopleura with thick, appressed, pale pubescence; mandibles strongly excised beneath; median, glabrous area of clypeus somewhat elevated posteriorly, the median, posterior angle forming a blunt tubercle, and a broad, transverse groove between the tubercle and the anterior margin of the clypeus; scape distinctly bicarinate beneath; first and second segments of flagellum equal in length; ocelli small, the distance between the eye margins and the lateral ocelli equal to three times the greatest diameter of the latter; parapsidal furrows present and deep on the posterior two-thirds of the mesonotum; scutellum gibbose; posterior face of propodeum distinctly elevated and separated from the dorsum by an irregular carina; tegulae glabrous, impunctate, except the anterior and inner margins, and the posterior, inner quadrant punctate and pale pubescent; posterior margin of first tergite ferruginous and with a fringe of fulvous pubescence; posterior fifth of second tergite and tergites three to six with moderate, distinct punctures and not interspersed with fine punctures; median, impunctate area of last tergite not broader posteriorly than anteriorly, the width of the emargination equal to only one-third the width of the tergite; tergite beyond the emargination concave and with a median, longitudinal carina extending to the posterior margin; postero-lateral tubercles of sixth and seventh sternite practically obsolete; last sternite with a pair of weak, lateral ridges on the anterior half; calcaria pale; proximal half of wings subhyaline, the distal half fuscous; cell 2nd $R_1 + R_2$ subtruncate; cell R_5 receiving vein M_{3+4} at the middle; cell R_4 present but less distinct than R_5 and receiving vein M_2 distinctly beyond the middle. Length, 11 mm.

Lectotype. ♀, Cayenne, in Spinola collection, Torino, Italy.

Allotype. ♂ (*in copula* with ♀), Venezuela : Las Ruices, Caracas Valley, 10.vi.1926 (*H. E. Box*), in British Museum (Natural History), London.

Specimens examined. 2 ♀♀, ♂, French Guiana : Roches de Kourou, vi.; ♂, Roches de Kourou, vii.; 6 ♀♀, ♂, Kourou, vii.; ♀, Gourdonville, viii.; ♀, Lunier river; ♂, Surinam : Paramaribo, 20.i.1920 (*Bollow*); ♀, 2 ♂♂, British Guiana : Bartica, 8 and 9.i.1913; 2 ♀♀, Blairmont, 1.ix.1923 (*H. E. Box*); ♂, Blairmont, ix.1923 (*F. X. Williams*); ♂, Essequibo river, 7.x.1929 (*O. W. Richards*); ♂, Essequibo river, 10.ix.1929 (*O. W. Richards*); 2 ♂♂, ♀, Kartabo, vii.–viii.1920 (*W. M. Wheeler*); ♂, Venezuela : Las Ruices, Caracas Valley, 21.v.1926 (*H. E. Box*); ♀, El Valle, near Caracas, 9.vi.1926 (*H. E. Box*); 2 ♂♂, Las Ruices, Caracas Valley, vii.1926 (*H. E. Box*); ♂, Caracas, x.1891; ♂, Caracas, 1928; ♀, Bas Sarare; ♀, Orinoco; ♀, Orinoco river; ♂, Venezuela; ♀, Colombia; ♀, Trinidad : Port of Spain, 16.iv.1925 (*H. M. Rohwer*); ♂, Trinidad, 12.i.1932; ♀, Trinidad, x.1931; ♂, Trinidad, 20.i.1932 (*D. Vesey-FitzGerald*); ♂ and ♀ (*in copula*), St. Clair Experiment Station, xi.1916 (*W. B.*); 2 ♀♀, South America.

The female is characterised by having the posterior marginal, pale pubescent band narrow, equal in width to the longitudinal stripes, the pale

pubescent spots of the fifth tergite widely separated, the vertex with a posterior, transverse band of pale pubescence and the sides of the propodeum with moderate, distinct punctures.

Spinola's material consisted of two females, one of which has been designated as lectotype. The specimens recorded from Paraguay by Mantero (1902) are not *rectangulum*, but a new species described hereafter as *daucia*. André (1913) recorded this species from Ecuador, Colombia, Brazil and Guiana. The specimens from Ecuador and Brazil are a new species described herein as *hercyna*.

Timulla (Timulla) stimula sp. n.

Pl. 1, fig. 13, ♀.

Female. Head (except mandibles proximally, antennal tubercles, pedicel and first segment of flagellum), abdomen and legs, black; mandibles proximally, antennal tubercles, scape, pedicel, first flagellar segment and thorax entirely, ferruginous; head clothed with sparse, pale pubescence, except the front with sparse, black pubescence and the vertex with a pair of large, subtriangular, pale, thickly pubescent spots; thorax clothed with sparse, pale pubescence, except the dorsum with sparse, ferruginous pubescence; abdomen clothed with sparse, pale pubescence beneath, the narrow, posterior margins of the sternites with thick, pale pubescence; abdominal tergites black pubescent with pale pubescent markings as follows: first tergite with a complete, narrow, posterior marginal band; second tergite with a pair of strongly diverging, narrow, longitudinal stripes continuous from the anterior to the posterior margins and a narrow, complete, posterior marginal band, the latter the same width as the longitudinal stripes and very slightly dilated medially; tergites three to five with a pair of elongate, rectangular spots, those on tergite five expanded posteriorly and almost contiguous at the midline; antennal scrobes carinate above; thorax not broader anteriorly than posteriorly, but gradually narrowed from the humeral angles to the propodeal spiracles and then suddenly expanded to the same width as at humeral angles; scutellar scale absent; mesonotal-scutellar suture not present; lateral margins of posterior face of propodeum dentate; sides of propodeum apparently impunctate but with scattered, small, shallow, indistinct punctures; second tergite with moderate punctures visible through the pubescence and closely interspersed with fine punctures; pygidial area longitudinally striate, the striae extending to the posterior margin; second sternite glabrous and with moderately large, distinct punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 10 mm.

Holotype. ♀, Venezuela, in Muséum National d'Histoire Naturelle, Paris.
Paratypes. 3 ♀♀, Colombia: El Banco, Magdalena Valley (*C. Allen*).

Similar in appearance to *rectangulum* (Spinola), but larger, with the pygidial area more finely and extensively striate, the thorax strongly constricted at the propodeal spiracles, the scutellar scale absent, the posterior, marginal band of the second tergite dilated medially, and the pale pubescent spots on the fifth tergite practically contiguous at the posterior margin of the tergite.

Timulla (Timulla) rectanguloides sp. n.

Pl. 1, fig. 14, ♀.

Timulla mediata Ashmead, 1900, *Trans. ent. Soc. Lond.* 1900 : 238, male and female (*nec* Fabricius).

Female. Head, abdomen and legs black, the thorax entirely ferruginous; vertex with a transverse band of pale, appressed pubescence; first tergite with a posterior, marginal band of pale, appressed pubescence; second tergite with a pair of longitudinal, narrow

stripes continuous from the anterior to the posterior margins, and a complete, posterior marginal band of pale appressed pubescence, the posterior band much broader than the longitudinal stripes and with its anterior margin slightly sinuate; tergites three to five each with a pair of linear spots of pale, appressed pubescence, the spots on tergite five contiguous at the posterior margin; antennal scrobes carinate above; lateral margins of dorsum of thorax scarcely emarginate at the mesonotal area; thorax very slightly broader posteriorly than anteriorly; scutellar scale present and distinct; lateral margins of posterior face of propodeum denticulate; sides of propodeum with large, deep, close punctures; second tergite finely punctate and also with moderate, distinct punctures scarcely visible through the pubescence; pygidial area longitudinally striate; second sternite with moderately large, distinct punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 8 mm.

Male. Like the male of *rectangulum* but the pale, appressed pubescence on the dorsum of propodeum sparse; clypeus and last abdominal tergite the same as in *rectangulum*; postero-lateral tubercles of sixth and seventh sternites, and lateral ridges of last sternite slightly stronger than in *rectangulum*. Length, 9 mm.

Holotype. ♀, Cat. no. 52199 U.S. National Museum, B.W.I.; St. Vincent (*H. H. Smith*).

Allotype. ♂, B.W.I., St. Vincent, Kingstown (*H. H. Smith*), in U.S. National Museum.

Paratypes. ♀, B.W.I., St. Vincent, south end (*H. H. Smith*); ♀, 2 ♂♂, St. Vincent (*H. H. Smith*); ♀, St. Vincent; ♂, B.W.I., Grenada, St. George's (Leeward side); ♀, Balthazar (Windward side) (*H. H. Smith*); 2 ♂♂, Mustique Island (*H. H. Smith*); ♀, Grenada; ♀, 3 ♂♂, B.W.I.

Very closely related to *rectangulum* (Spinola), the female differing in having a broad, posterior, marginal band on the second tergite with the anterior margin of the band sinuate, the pale pubescent spots of tergite five contiguous posteriorly, and the sides of the propodeum coarsely punctate. The males differ in having the dorsum of the propodeum sparsely, pale pubescent instead of thickly pubescent as in *rectangulum*. The specimens recorded by Ashmead (1900) as *mediata* have been studied and constitute most of the material here described. *T. mediata* belongs to a very different group of this genus.

Timulla (Timulla) caliensis sp. n.

Male. Head, thorax, first and last abdominal segments and legs, black; remainder of abdomen ferruginous and clothed with fulvous pubescence; head, thorax and legs clothed with sparse, pale pubescence, except the mesonotum and anterior, median area of scutellum clothed with sparse, black pubescence, and the front, pronotum posteriorly, dorsum of propodeum and elevated areas of mesopleura with thick, appressed, pale pubescence; mandibles strongly excised beneath; median, glabrous area of clypeus elevated posteriorly, the elevated face subtriangular and the median, posterior angle of the latter very slightly reflexed; scape distinctly bicarinate beneath; first and second segments of flagellum equal in length; antennal scrobes carinate above; ocelli moderately small, the distance between the eye margins and the lateral ocelli slightly less than three times the greatest diameter of the latter; parapsidal furrows present and deep on the posterior two-thirds of mesonotum; scutellum gibbose; posterior face of propodeum strongly elevated and separated from the dorsum by a distinct, irregular carina; tegulae glabrous, impunctate except the anterior and inner margins and the posterior, inner quadrant punctate and pale pubescent; posterior margin of first tergite ferruginous and with a fringe of fulvous pubescence; posterior fifth of second tergite, and tergites three to six with moderate punctures interspersed with close fine punctures and with sparse, appressed fulvous pubescence in

addition to the erect, fulvous hairs; median, impunctate area of last tergite not broadened posteriorly the width of the emargination equal to one-third the width of the tergite; tergite beyond the emargination concave and with a median, longitudinal carina extending to the posterior margin, the carina very high posteriorly forming a keel; postero-lateral tubercles of sixth and seventh sternites weak; last sternite with a pair of distinct, but not prominent lateral ridges on the anterior half; calcaria pale; proximal half of wings subhyaline, the distal half subfuscous; cell 2nd $R_1 + R_2$ subtruncate distally; cell R_5 receiving vein M_{3+4} distinctly beyond the middle; cell R_4 present but less distinct than R_5 and receiving vein M_2 distinctly beyond the middle. Length, 12 mm.

Female. Head, abdomen and legs black, except the antennal tubercles, scape, pedicel, first flagellar segment, intermediate and posterior tibiae and all the tarsi, ferruginous; thorax entirely ferruginous; vertex with a transverse band of pale, appressed pubescence; first tergite with a posterior marginal band of pale pubescence; second tergite with a pair of narrow, longitudinal stripes continuous from the anterior to the posterior margins and a complete, posterior marginal band of pale appressed pubescence, the posterior band broader than the longitudinal stripes and with its anterior margin slightly sinuate; tergites three to five each with a pair of linear, pale pubescent spots, those on tergite five contiguous at the posterior margin; antennal scrobes carinate above; lateral margins of dorsum of thorax scarcely emarginate medially at the mesonotal area; dorsum of thorax slightly broader posteriorly than anteriorly; scutellar scale present and distinct; lateral margins of posterior face of propodeum strongly denticulate; sides of propodeum with moderate, distinct, close punctures; second tergite finely punctate and with moderate, distinct punctures scarcely visible through the pubescence; pygidial area longitudinally striate; second sternite with moderate, distinct punctures; calcaria pale. Length, 9 mm.

Holotype. ♂, COLOMBIA: Cali, 15.v.1908, in Muséum National d'Histoire Naturelle, Paris.

Allotype. ♀, COLOMBIA: San Antonio, in Muséum National d'Histoire Naturelle, Paris.

Paratypes. ♀, 3 ♂♂, COLOMBIA: Cali; ♂, Sevilla, Magdalena, 1.xii.1926 (*G. Salt*).

Closely related to *rectangulum* (Spinola); the male differs in having the elevated, posterior face of clypeus more strongly triangular and in having the abdominal tergites more punctate and with appressed, fulvous pubescence as described above; the female differs in having the posterior marginal band of the second tergite broader and with its anterior margin sinuate, the antennae and legs in part ferruginous and the somewhat more closely punctate sides of propodeum. The pale pubescent pattern of the abdomen is very much like that illustrated for *rectanguloides*. The male specimen from Magdalena, Colombia, has the first abdominal segment almost entirely ferruginous and only the posterior half of the last segment black; the posterior, median angle of the clypeus is also slightly more reflexed than in the Cali specimens. In other respects it is entirely like *caliensis*, including the punctation of the abdomen.

Timulla (Timulla) tulliola sp. n.

Male. Head, thorax and legs entirely black, the abdomen entirely ferruginous and clothed above with fulvous pubescence, that of the last tergite somewhat infuscated; head, thorax and legs with sparse, pale pubescence, except the mesonotum and anterior, median area of scutellum with sparse black pubescence, the front, pronotum posteriorly, dorsum of propodeum and elevated areas of mesopleura with slightly thicker, appressed, pale pubescence; mandibles strongly excised beneath; median, glabrous area of clypeus elevated posteriorly, the elevated face distinctly triangular with the median, posterior angle

reflexed; scape distinctly bicarinate beneath; first and second segments of flagellum equal in length; antennal scrobes carinate above; ocelli small, the distance between the eye margins and the lateral ocelli equal to three and one-half times the greatest diameter of the latter; parapsidal furrows present and deep on the posterior two-thirds of mesonotum; scutellum gibbose; posterior face of propodeum only slightly elevated and indistinctly separated from the dorsum; tegulae glabrous, impunctate except the anterior and inner margins punctate and sparsely, black pubescent; fulvous pubescence of abdomen sparse and suberect, with no appressed, fulvous pubescence; median, impunctate area of last tergite not broadened posteriorly, the emargination comparatively narrow; tergite beyond the emargination concave and with a median, longitudinal carina extending to the posterior margin; postero-lateral tubercles of sixth and seventh sternites weak, almost obsolete; last sternite with a pair of weak, lateral ridges on the anterior half; calcaria pale; wings subfuscous almost throughout, very slightly lighter proximally; cell 2nd $R_1 + R_2$ subtruncate distally; cell R_5 receiving vein M_{3+4} at the middle; cell R_4 present but less distinct than R_5 and receiving vein M_2 two-thirds the distance from base to apex. Length, 9 mm.

Holotype. ♂, Brazil: Itatiaya, Rio de Janeiro (850 m.), in Muséum National d'Histoire Naturelle, Paris.

Differs from all other species in this group with glabrous, impunctate tegulae in having the abdomen entirely ferruginous; this with the distinctly triangular, elevated posterior face of the clypeus and the black pubescent margins of the tegulae will serve for identification.

Timulla (Timulla) baucis sp. n.

Male. Head, thorax, last abdominal segment and legs, black; remainder of abdomen ferruginous and clothed with fulvous pubescence; head, thorax and legs clothed with sparse, pale pubescence, except the mesonotum and anterior, median area of scutellum with sparse, black pubescence, and the front, pronotum posteriorly, dorsum of propodeum and elevated areas of mesopleura with thick, appressed, pale pubescence; posterior fourth of second tergite and tergites three to six with moderate punctures interspersed with fine punctures and with appressed, fulvous pubescence as well as suberect, fulvous pubescence; mandibles strongly excised beneath; posterior two-thirds of clypeus strongly elevated and bluntly produced medially forming a deep, transverse groove between the elevated area and the anterior margin of the clypeus, the process extending anterior to the latter; scape distinctly bicarinate beneath; first and second flagellar segments equal; antennal scrobes carinate above; ocelli small, the distance between the eye margins and the lateral ocelli equal to at least four times the greatest diameter of the latter; parapsidal furrows present and deep on the posterior two-thirds of mesonotum; scutellum gibbose; posterior face of propodeum only slightly elevated, not distinctly separated from the dorsum; tegulae glabrous, impunctate except the anterior and inner margins and the posterior, inner quadrant punctate and pale pubescent; median, impunctate area of last tergite broader posteriorly than anteriorly, the posterior third depressed medially, thus the lateral angles of the emargination prominent; tergite beyond the emargination concave and with a median, longitudinal carina extending to the posterior margin, the carina high and forming a keel just before the posterior margin; postero-lateral tubercles of sixth and seventh sternites weak, almost obsolete; last sternite with a pair of distinct, but not prominent lateral ridges on the anterior half; calcaria pale; proximal half of wings subhyaline, the distal half fuscous; cell 2nd $R_1 + R_2$ subtruncate distally; cell R_5 receiving vein M_{3+4} at the middle; cell R_4 present but less distinct than R_5 and receiving vein M_2 distinctly beyond the middle. Length, 15 mm.

Holotype. ♂, Argentine Republic: Environs d'Icano, Bords du Rio Salado, Santiago del Estero, in Muséum National d'Histoire Naturelle.

Paratypes. 2 ♂♂, Argentine Republic: Environs d'Icano, Bords du Rio Salado, Santiago del Estero; 2 ♂♂, La Palisa del Bracho, 25 kil. n.-o. d'Icano, Santiago del Estero; 2 ♂♂, Barrancas, Banados de Rio Salado, 80 kil. o. d'Icano, Santiago del Estero; ♂, Santiago del Estero; ♂, Tucuman, 6.i.1917; ♂, Tucuman, 18.iii.1930 (*H. A. Jaynes*).

Similar to *sulcata* but the tegulae are not punctate throughout and a larger, posterior area of the clypeus is elevated so that the transverse groove between the latter and the anterior margin of the clypeus is narrower and the median process more prominent. Also similar to *punctulata* but that species has the whole disk of the second tergite closely punctate, both the first and last abdominal segments black, and a less extensive, posterior area of the clypeus elevated. In *baucis* the disk of the second tergite is sparsely punctate with only the posterior fourth of the tergite closely punctate with moderate and fine punctures. *T. caliensis*, which also has the abdominal segments punctured and pubescent as in *baucis*, has only a slight portion of the posterior area of the clypeus elevated and the median, posterior angle of the elevation slightly reflexed; *T. caliensis* also has both the first and last abdominal segments black.

Timulla (Timulla) cloelia sp. n.

Pl. 6, fig. 109, ♂.

Male. Head, thorax, last abdominal segment and legs, black; remainder of abdomen ferruginous and with sparse, fulvous pubescence; head, thorax and legs with sparse, pale pubescence, except the mesonotum and anterior, median area of scutellum with sparse, black pubescence, the front, pronotum posteriorly, dorsum of propodeum and elevated areas of mesopleura also with somewhat thicker, pale, appressed pubescence; mandibles strongly excised beneath; entire median area of clypeus strongly elevated, highest along the mid-longitudinal line and with a shallow, anterior, transverse, submarginal groove; scape distinctly bicarinate beneath; first and second segments of flagellum equal in length; antennal scrobes weakly carinate above; ocelli small, the distance between the eye margins and the lateral ocelli equal to three times the greatest diameter of the latter; parapsidal furrows present and deep on the posterior two-thirds of mesonotum; scutellum gibbose; posterior face of propodeum slightly elevated and separated from the dorsum by an irregular carina; tegulae glabrous, impunctate, except the anterior and inner margins and the posterior, inner quadrant punctate and pale pubescent; median, impunctate area of last tergite much broader posteriorly than anteriorly, the width of the emargination equal to half the width of the tergite; tergite beyond the emargination concave and with a median, longitudinal carina extending to the posterior margin; tergites with only moderate punctures, the disk of the second glabrous and with only scattered punctures; postero-lateral tubercles of sixth and seventh sternites weak, indistinct; last sternite with a pair of weak, but distinct, lateral ridges on the anterior half; calcaria pale; proximal half of wings subhyaline, the distal half subfuscous; cell 2nd $R_1 + R_2$ subtruncate distally; cell R_5 receiving vein M_{3+4} at the middle; cell R_4 present but less distinct than R_5 and receiving vein M_2 slightly beyond the middle. Length, 11 mm.

Holotype. ♂, Cat. no. 52130 U.S. National Museum, Brazil: Pernambuco, 29.xii.1882.

Differs from other species in this group in having the entire median area of clypeus elevated as described above.

Timulla (Timulla) tinctura sp. n.

Pl. 9, fig. 135, ♂.

Mutilla rufiventris Cresson, 1902, *Trans. Amer. ent. Soc.* **28** : 61, male (in part, Corumba specimen) (*nec* Klug).

Male. Head, thorax, last abdominal segment and legs, black; remainder of abdomen ferruginous and clothed with sparse, fulvous pubescence; except the antero-lateral areas of the second tergite with sparse, suberect, pale pubescence; head, thorax and legs clothed with sparse, pale pubescence, except the mesonotum and anterior, median area of scutellum with sparse, black pubescence, the front, pronotum posteriorly, dorsum of propodeum and elevated areas of mesopleura also with thicker, appressed, pale pubescence; mandibles strongly excised beneath; posterior third of clypeus elevated, a deep, transverse groove between the elevated area and the slightly elevated, anterior margin of clypeus; scape distinctly bicarinate beneath; first and second segments of flagellum equal in length; antennal scrobes carinate above; ocelli small, the distance between the eye margins and the lateral ocelli approximately equal to three times the greatest diameter of the latter; parapsidal furrows present and deep on the posterior two-thirds of mesonotum; scutellum gibbose; posterior face of propodeum distinctly elevated and separated from the dorsum by an irregular carina; tegulae glabrous, impunctate, except the anterior and inner margins and the posterior, inner quadrant punctate and pale pubescent; abdominal tergites with only moderate punctures, the disk of the second tergite glabrous and with only scattered punctures; median, impunctate area of last tergite only slightly broader posteriorly than anteriorly, the width of the emargination equal to slightly more than one-third the width of the tergite; tergite beyond the emargination concave, with a median, longitudinal carina extending to the posterior margin; postero-lateral tubercles of sixth and seventh sternites very weak, almost obsolete; last sternite with a pair of weak, lateral ridges on the anterior half; calcaria pale; proximal half of wings subhyaline, the distal half fuscous; cell 2nd $R_1 + R_2$ subtruncate distally; cell R_5 receiving vein M_{3+4} slightly beyond the middle; cell R_4 present but less distinct than R_5 and receiving vein M_2 slightly beyond the middle. Length, 10 mm.

Holotype. ♂, Brazil : Vista Alegre, Rio Branco, Amazonas, 6.ix.1924, in University of Minnesota collection.

Paratypes. ♂, Brazil : Vista Alegre, Rio Branco, Amazonas, 6.ix.1924; ♂, Amazonas (*Bates*); 3 ♂♂, Bolivia : Buenavista, near Santa Cruz, 1928 (*J. Steinbach*); 3 ♂♂, Santa Cruz (*J. Steinbach*); ♂, Brazil : Corumba, Matto Grosso, iii.; ♂, Para, 2.iv.1901 (*Ducke*); ♂, Para, 27.ix.1901 (*Ducke*); ♂, Para.

Related to *cloelia* but has the clypeus as described above and the emargination at the posterior end of the median, impunctate area of the last tergite narrow, equal to only slightly more than one-third the width of the tergite. The paratypes vary in length from 10 mm. to 13 mm. The Corumba specimen recorded by Cresson (1902) has been examined and found to be the same as this species.

Timulla (*Timulla*) *phalerata* (Klug). (New combination.)

Mutilla phalerata Klug, 1821, *N. Acta Acad. Nat. Curios.* **10** : 308, T. 22, f. 3, female.
Mutilla phalerata Gerstaecker, 1874, *Arch. Naturg.* **40** : 300, female.
Mutilla phalerata Dalle Torre, 1897, *Cat. Hymen.* **8** : 72–73, female (in part).
Mutilla phalerata André, 1903, *Gen. Ins.* **11** : 42, n. 45, female.

Lectotype and paratype. 2 ♀♀, no. 3633, Brazil : Cametá, Para (*Sieber*), in Zoologisches Museum der Universität, Berlin.

No specimens of this species have appeared in collections since Klug's time.

All identifications of specimens as this species which have been examined have been found to be incorrect. The lectotype and paratype are identical. *T. phalerata* differs from related species in this group in having the pubescent maculations golden rather than pale. The pubescent markings are as follows: a pair of subtriangular spots on the vertex, a complete, posterior marginal band on both the first and second tergites, the two bands connected by a pair of longitudinal stripes on the second tergite, and tergites three to five each with a pair of elongate, rectangular spots, all golden pubescent; thorax entirely ferruginous; anterior two-thirds of the pygidial area irregularly rugose.

The male assigned to *phalerata* by Burmeister (1875) is not congeneric. It is a specimen of *Ephuta polydora* (Gerstaecker).

Timulla (Timulla) eriphyla sp. n.

Pl. 1, fig. 15, ♀.

Mutilla rectangulum Gerstaecker, 1874, *Arch. Naturg.* **40** : 300, female (in part, Colombia specimen) (*nec* Spinola).

Female. Head, abdomen and legs black, except the antennal tubercles and the tip of the scape, ferruginous; thorax ferruginous, except the meso- and metapleural areas largely black; head clothed with sparse, pale pubescence, except the front and vertex with sparse, dark ferruginous to black pubescence; thorax clothed with sparse, pale pubescence, except the dorsum with sparse, ferruginous pubescence; abdomen beneath clothed with sparse, pale pubescence; abdominal tergites clothed for the most part with black pubescence, the pale pubescent markings as follows: first tergite with a complete, posterior marginal band; second tergite with a pair of narrow, longitudinal stripes continuous from the anterior to the posterior margins and a complete, narrow, posterior marginal band; tergites three to five each with a pair of linear spots, those on tergite five widely separated; antennal scrobes carinate above; thorax distinctly broader posteriorly than anteriorly; lateral margins of dorsum of propodeum almost straight, scarcely emarginate at the mesonotal area; scutellar scale present and distinct; mesonotal-scutellar suture indistinct; lateral margins of posterior face of propodeum denticulate; sides of propodeum with large, close punctures throughout; second abdominal tergite with moderately large, distinct punctures visible through the pubescence and closely interspersed with fine punctures; pygidial area weakly, irregularly rugose on the anterior half, weakly granulate on the posterior half; second abdominal sternite with moderately large, distinct punctures throughout; legs clothed with sparse pale pubescence; calcaria pale. Length, 8 mm.

Holotype. ♀, French Guiana: Roches de Kouru, vi., in Muséum National d'Histoire Naturelle, Paris.

Paratypes. ♀, French Guiana: Roches de Kouru, vi.; ♀, Roches de Kouru, vii.; 3 ♀♀, Roches de Kouru; ♀, Kouru, vii; 3 ♀♀, Cayenne; 2 ♀♀, French Guiana; ♀, Trinidad, B.W.I.: Port of Spain, 1913 (*R. Thaxter*); ♀, Trinidad, B.W.I., 29.iv.1929 (*Darlington*); ♀, Maraval (*W. Buthn*); ♀, St. Augustine, 14.iii.1933 (*D. Vesey-FitzGerald*); ♀, Pt. Radix, Maycuo, 8.iv.1933 (*D. Vesey-FitzGerald*); 2 ♀♀, Venezuela: San Esteban; ♀, Merida; ♀, Maculo, 30.x.1891 (*L. Meinert*); ♀, Venezuela (*L. Meinert*); ♀, Puerto Cabello (*Moritz*); ♀, Venezuela, ix.; ♀, Colombia (*Moritz*); 4 ♀♀, Colombia.

T. eriphyla superficially resembles the female of *mediata* Fabricius, but differs in having the thorax distinctly broader posteriorly than anteriorly, in the coarsely punctured sides of propodeum and the more weakly rugose pygidium. The legs of the various paratypes, especially the tibiae and tarsi, vary in colour from black, through dark ferruginous to ferruginous, two Venezuela specimens

having the tibiae and tarsi distinctly ferruginous. The length of the paratypes varies from 6 mm. to 8·5 mm.

Timulla (Timulla) runata sp. n.

Mutilla centralis var. Cameron, 1894, *Biol. Centr.-Amer., Hymen.* **2** : 272, female (variety, *nec* type).

Female. Head and abdomen black, except the mandibles proximally, the antennal tubercles, scape and proximal flagellar segments, ferruginous; thorax and legs entirely ferruginous, except the femora blackish at the tips; head clothed with sparse, pale pubescence, except the front and vertex with sparse, blackish pubescence, the vertex also with a pair of inconspicuous, pale pubescent spots posteriorly; thorax clothed with sparse, pale pubescence, except the dorsum clothed with sparse, ferruginous pubescence; abdomen beneath clothed with sparse, pale pubescence, the latter thick at the posterior margins of the sternites; abdominal tergites for the most part black pubescent, the pale pubescent markings as follows: first tergite with a narrow, complete, posterior marginal band; second tergite with a pair of narrow, longitudinal stripes continuous from the anterior to the posterior margin and with a narrow, complete, posterior marginal band; tergites three to five each with a pair of linear spots, those on tergite five widely separated; antennal scrobes carinate above; thorax distinctly wider posteriorly than anteriorly; lateral margins of dorsum of thorax straight, not emarginate; scutellar scale present and distinct; mesonotal-scutellar suture indistinct; lateral margins of posterior face of propodeum denticulate; sides of propodeum with moderately large, close punctures throughout; second tergite with moderate, distinct punctures visible through the pubescence and closely interspersed with fine punctures; pygidial area irregularly rugose on the anterior two-thirds, the posterior third granulate to glabrous; second sternite with moderately large, distinct punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 7·5 mm.

Holotype. ♀, Cat. no. 52131 U.S. National Museum, Canal Zone : Gamboa, 31.i.1921 (*J. G. Sanders*).

Paratypes. ♀, Canal Zone : Ancon, 3.iv.1926 (*C. T. Greene*); ♀, Panama : Taboga Island, 28.ii.1911 (*A. H. Jennings*); ♀, Taboga Island, 21–22.ix.1918 (*H. F. Dietz*); 2 ♀♀, Bella Vista, 6.vii.1924 (*Nathan Banks*); ♀, Bella Vista, 8.viii.1924 (*N. Banks*); 2 ♀♀, Volcan de Chiriqui, 2500–4000 ft. (*Champion*); 2 ♀♀, Volcan de Chiriqui, 2000–3000 ft. (*Champion*); ♀, Caldera, 1200 ft. (*Champion*); ♀, Bugaba, 800–1500 ft. (*Champion*); ♀, Colombia : New Granada.

The Panama specimens mentioned by Cameron (1894) as a probable variety of *centralis* have been studied, they are the same as this species, and are included with the paratype material listed above. *T. runata* is related to *eriphyla* but has the thorax entirely ferruginous and the legs ferruginous, except the tips of the femora black. The pubescent pattern of the abdomen is the same as in *eriphyla*.

Timulla (Timulla) nisa sp. n.

Mutilla rectangulum Gerstaecker, 1874, *Arch. Naturg.* **40** : 300, female (in part, Bogota specimen) (*nec* Spinola).

Mutilla porcata var. Cameron, 1894, *Biol. Centr.-Amer., Hymen.* **2** : 276, pl. 13, fig. 7, female (variety, *nec* type).

Female. Head, abdomen and legs black, except the mandibles (excluding the tips), antennal tubercles, scape, pedicel and first flagellar segment ferruginous, and the abdomen beneath, very dark mahogany red; thorax entirely ferruginous; head clothed with sparse, pale pubescence except the front and vertex with sparse, black pubescence; thorax clothed with sparse, pale pubescence, except the dorsum with sparse, dark ferruginous pubescence;

abdomen beneath clothed with sparse, pale pubescence, thicker at the posterior margins of the sternites; abdominal tergites clothed for the most part with black pubescence, the pale pubescent markings as follows: a complete, posterior marginal band on the first tergite; second tergite with a pair of narrow, longitudinal stripes extending from the anterior to the posterior margins and a narrow, complete, posterior marginal band, the anterior margin of the latter straight; tergites three to five each with a pair of elongate, rectangular spots, those on tergite five with an extension along the posterior margin of the tergite towards the middle, but not united medially; antennal scrobes carinate above; thorax slightly broader posteriorly than anteriorly; lateral margins of dorsum of thorax slightly crenulate and slightly emarginate at the mesonotal area; scutellar scale present and distinct; mesonotal-scutellar suture distinct; lateral margins of posterior face of propodeum denticulate; anterior third of sides of propodeum very sparsely punctate, the posterior two-thirds with large, close punctures; second tergite with moderately large, distinct punctures visible through the pubescence and closely interspersed with fine punctures; pygidial area irregularly rugose on the anterior half, the posterior half weakly granulate; first sternite with a distinct, median, longitudinal carina; second sternite with large, distinct punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 7 mm.

Holotype. ♀, Cat. no. 52132 U.S. National Museum, Canal Zone : Ancon, 3.iv.1926 (*C. T. Greene*).

Paratypes. ♀, Canal Zone : Corozal, 16.i.1929 (*C. H. Curran*); ♀, Panama : Caldera, 1200 ft. (*Champion*); ♀, Colombia : San Antonio (*Forel*); ♀, Rio Aquatel, 15.vii.1908, 1000 m.; ♀, Restrepo, Dept. Meta, 500 m.; ♀, Bogota (*Lindig*); ♀, Candelaria, Cauca, 1909, 1000 m.; ♀, Colombia; ♀, Venezuela : Bas Sarare; ♀, Merida; ♀, Venezuela, ix.; ♀, Venezuela (*Meinert*); ♀, Trinidad, B.W.I. : St. Michael's valley, 26.ii.1933 (*D. Vesey-FitzGerald*).

Similar in appearance to *rectangulum* and *eriphyla*. *T. rectangulum* has a longitudinally striated pygidium and is easily separated from *nisa*. *T. eriphyla* differs in having the thorax more distinctly broader posteriorly than anteriorly, in having the sides of the propodeum with large punctures throughout, and in having the meso- and metapleural areas black. The pale pubescent pattern of the abdomen in *nisa* is like that of *eriphyla*, except that the spots on the fifth tergite are produced along the posterior margin of the tergite towards the middle, but are not united medially. The pygidial area varies in the paratypes in having the posterior half weakly granulate, glabrous or irregularly rugose. The length varies from 7 to 9 mm. The specimen from Bogota recorded by Gerstaecker (1874) as *rectangulum* is the same as this species. The variety of *porcata* mentioned and figured by Cameron (1894) is also this species.

Timulla (Timulla) continua sp. n.

Pl. 1, fig. 16, ♀.

Female. Head, thorax and legs ferruginous, except the tips of the mandibles black and the distal half of the flagellum infuscated; abdomen very dark ferruginous, appearing black; head clothed throughout with sparse, pale, inconspicuous pubescence, except the vertex with a pair of small, inconspicuous, subtriangular spots of appressed, pale pubescence; thorax clothed with sparse, pale pubescence, except the dorsum with sparse, ferruginous pubescence; abdomen beneath with sparse, pale pubescence; abdominal tergites clothed with black pubescence, except the first and the lateral areas of the second with sparse, pale pubescence, and with the pale pubescent markings as follows: first tergite with a complete, posterior marginal band; second tergite with a pair of narrow, longitudinal stripes, the latter contracted posteriorly and almost obsolescent at the junction with a moderately

broad, complete, posterior marginal band; tergites three to five each with a pair of linear spots, those on tergite five widely separated; antennal scrobes carinate above; front and vertex densely, deeply punctate; thorax very slightly broader posteriorly than anteriorly, the lateral margins of the dorsum crenulate and shallowly emarginate at the mesonotal area; scutellar scale present and distinct; mesonotal-scutellar suture absent; dorsum of thorax with large, dense, deep punctures; lateral margins of posterior face of propodeum dentate; sides of propodeum with moderate, close, deep punctures; second tergite with moderately large, distinct punctures closely interspersed with fine punctures; anterior third of pygidial area weakly, inconspicuously rugose, the posterior two-thirds glabrous and weakly granulate; second sternite with moderately large, distinct punctures; legs sparsely clothed with pale pubescence; calcaria pale. Length, 6 mm.

Holotype. ♀, Canal Zone : Colon, 16.xi.1899 (*R. Mull*), in Zoological Museum, Hamburg, Germany.

Characterised by the ferruginous head and legs, almost complete, longitudinal stripes on the second abdominal tergite and the weakly sculptured pygidial area.

Timulla (Timulla) discontinua sp. n.

Pl. 1, fig. 17, ♀.

Female. Head, thorax and legs ferruginous, except the tips of the mandibles and the flagellum beyond the first segment blackish; abdomen black; head clothed with sparse, pale pubescence, except the front and vertex with sparse, ferruginous pubescence; thorax with sparse, pale pubescence except the dorsum with sparse, dark ferruginous pubescence; abdomen beneath with sparse, pale pubescence; pale pubescent markings of abdominal tergites as follows: first tergite with only a pair of small, transverse spots aligned with the anterior stripes of the second tergite; second tergite with a pair of anterior stripes extending slightly beyond the transverse midline and a narrow, posterior marginal band with its anterior margin slightly sinuate; tergites three to five each with a pair of linear spots, those on tergite five widely separated; antennal scrobes carinate above; front and vertex with large, deep punctures; thorax slightly broader posteriorly than anteriorly, the lateral margins of the dorsum slightly diverging towards the rear and scarcely at all emarginate at the mesonotal area; scutellar scale present and distinct; mesonotal-scutellar suture weak; lateral margins of posterior face of propodeum dentate; sides of propodeum with moderate, close punctures; second tergite with moderately large punctures visible through the pubescence and closely interspersed with fine punctures; pygidium glabrous, very weakly granulate anteriorly; second sternite with moderately large, distinct punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 6 mm.

Holotype. ♀, French Guiana : Gourdonville, in Muséum National d'Histoire Naturelle, Paris.

Paratype. ♀, Venezuela : Arabapo, Mt. Roraima, 4000 ft., 24.xi.1932 (*D. Vesey-FitzGerald*).

Related to *continua*. Differs in having the abdomen black, with only a pair of small, transverse spots at the posterior margin of the first tergite and with the stripes of the second tergite extending only slightly beyond the transverse midline.

Timulla (Timulla) ruficornis sp. n.

Female. Head black, except the mandibles (exclusive of the tips), antennal tubercles and antennae, entirely ferruginous; thorax, abdomen and legs, ferruginous, except the ferruginous of the abdomen above obscured by sparse, black pubescence, and the tips of

the femora blackish; head clothed with sparse, pale pubescence, except the front and vertex with sparse, fuscous to black pubescence and the vertex with an inconspicuous, posterior, transverse band of pale, appressed pubescence; thorax clothed with pale pubescence except the dorsum with sparse, very dark ferruginous pubescence; abdomen beneath clothed with sparse, pale pubescence; abdominal tergites clothed for the most part with sparse, black pubescence, the pale pubescent markings as follows : first tergite with a narrow complete, posterior marginal band; second tergite with a pair of narrow, longitudinal stripes continuous from the anterior to the posterior margins and a narrow, posterior marginal band, the anterior margin of the latter straight; tergites three to five each with a pair of linear spots, those on tergite five widely separated; antennal scrobes carinate above; thorax not broader posteriorly than anteriorly; lateral margins of dorsum of thorax slightly crenulate and shallowly emarginate at the mesonotal area; scutellar scale present and distinct; mesonotal-scutellar suture indistinct; lateral margins of posterior face of propodeum not denticulate, slightly serrate; sides of propodeum with moderate, close punctures posteriorly; second tergite with large, distinct punctures visible through the pubescence; anterior two-thirds of pygidial area irregularly rugose, the posterior third weakly granulate; second sternite with large, distinct, close punctures; legs clothed with sparse pale pubescence; calcaria pale. Length, 7·5 mm.

Holotype. ♀, Ecuador : Guayaquil, iii.1901 (*Buchwald*), in Muséum National d'Histoire Naturelle, Paris.

Paratype. ♀, Ecuador : Guayaquil, 1900 (*Buchwald*).

Characterised by having the thorax no broader posteriorly than anteriorly, by the ferruginous antennae, the large punctures visible through the pubescence of the second tergite and the pale pubescent markings of the abdominal tergites. The pale pubescent pattern of the latter is like that of *eriphyla*.

Timulla (*Timulla*) *punctata* (du Buysson). (New combination.)

Mutilla bitaeniata var. Gerstaecker, 1874, *Arch. Naturg.* **40** : 300, female (variety, *nec* type).
Mutilla lineola var. *punctata* du Buysson, 1892, *Ann. Soc. ent. Fr.* **61** : 58, female.
Mutilla mediata var. *punctata* Dalle Torre, 1897, *Cat. Hymen.* **8** : 60, female.
Mutilla punctata André, 1903, *Gen. Ins.* **11** : 42, n. 51, female.

Type. ♀, Venezuela : San Esteban (*Simon*), in Muséum National d'Histoire Naturelle, Paris.

Specimens examined. 2 ♀♀, Venezuela : Puerto Cabello (*Morita*); ♀, Caracas [these three specimens were recorded by Gerstaecker as *bitaeniata* var.]; ♀, Caracas, ♀, Therida; 2 ♀♀, Merida; ♀, Colombia : San Diego.

Gerstaecker's specimens of *bitaeniata* var. have been compared with du Buysson's type and found to be the same. *T. punctata* is very similar in appearance to *bitaeniata* (Spinola) but has complete, posterior marginal bands on the first and second tergites. The thorax is maculated with black as in *bitaeniata* and is broader posteriorly than anteriorly; the pygidial area is irregularly rugose on the anterior two-thirds, granulate on the posterior third. The pale pubescent pattern of the abdomen is almost exactly like that in *eriphyla*.

Timulla (*Timulla*) *bitaeniata* (Spinola).

Pl. 1, fig. 18, ♀.

Mutilla bitaeniata Spinola, 1841, *Ann. Soc. ent. Fr.* **10** : 91, female.
Mutilla bitaeniata Gerstaecker, 1874, *Arch. Naturg.* **40** : 300, female (in part, *nec* variety).
Mutilla bitaeniata Dalle Torre, 1897, *Cat. Hymen.* **8** : 17, female (in part).
Mutilla bitaeniata André, 1903, *Gen. Ins.* **11** : 41, n. 9, female.
Timulla (*Timulla*) *bitaeniata* Mickel, 1937, *Rev. Ent. Rio* **7** : 167, female.

Lectotype. ♀, CAYENNE, in Spinola collection, Torino, Italy. 2 cotypes are also in the Spinola collection.

Specimens examined. 2 ♀♀, FRENCH GUIANA: Roches de Kouru; ♀, Nouveau Chantier, Bas-Maroni; ♀, Paraicabo, Rivière de Kouru; 7 ♀♀, Cayenne; ♀, SURINAM: Paramaribo (*Michaelis*); ♀, TRINIDAD, B.W.I.: Port of Spain, 10.vii.1927; ♀, Port of Spain, 1913 (*R. Thaxter*); 2 ♀♀, St. Augustine to Caroni river, 11.vii.1927; ♀, La Montserrat Est., 26.v.1936 (*N. A. Weber*); ♀, Montserrat, 29.vi. (*Aug. Busck*); ♀, Maroral (*W. Buthn*); ♀, Caporo, 10.ii.1910; ♀, Arima Caria Rd., 29.iv.1929 (*Darlington*); ♀, San Fernando, vi.1918 (*C. B. Williams*); ♀, Mayaro, 1.i.1924 (*S. A. Neave*); 2 ♀♀, Mt. St. Benedict, 24.iv. and 23 v.1933 (*D. Vesey-FitzGerald*); ♀, Pt. Radix, Mayaro, 9.iv.1933 (*D. Vesey-FitzGerald*); ♀, Mt. Tabor, 22.iii.1933 (*D. Vesey-FitzGerald*); 2 ♀♀, Tunapuna, 15.v. and 22.viii.1933 (*D. Vesey-FitzGerald*); 2 ♀♀, Salandra Bay, 19.vii.1933 (*D. Vesey-FitzGerald*); 5 ♀♀, Trinidad, B.W.I., 16.v.1932, 13.x.1931, and 23.xii.1931; ♀, Trinidad (*G. A. K. Marshall*); ♀, VENEZUELA; 12 ♀♀, COLOMBIA.

This species is easily recognised by the pubescent markings of the abdomen; the second tergite does not have a posterior marginal band so that the lateral stripes which are continuous from the anterior to posterior margins join with the lateral spots of tergites three to five in forming a pair of lateral stripes extending the length of the abdomen; the thorax is extensively marked with black, the mesonotal area having a pair of large, lateral, black spots; the thorax is distinctly broader posteriorly than anteriorly; pygidial area irregularly rugose on the anterior two-thirds, the posterior third granulate.

✓ **Timulla (Timulla) leucippe** sp. n.

Pl. 9, fig. 127, ♂.

Male. Head, thorax, first and last abdominal segments, and legs, black; remainder of abdomen ferruginous and clothed with fulvous pubescence; head, thorax and legs clothed with sparse, pale pubescence except the mesonotum and anterior median area of scutellum with sparse, black pubescence, the front, genae, pronotum posteriorly, dorsum of propodeum and elevated areas of mesopleura with thicker, appressed, pale pubescence; mandibles strongly excised beneath; median, glabrous area of clypeus elevated along the mid-longitudinal line forming a distinct ridge and sloping to the sides from the latter; scape distinctly bicarinate beneath; antennal scrobes carinate above; ocelli small, the distance between the eye margins and the lateral ocelli equal to at least three and one-half times the greatest diameter of the latter; parapsidal furrows present and deep on the posterior two-thirds of mesonotum; scutellum gibbose; posterior face of propodeum distinctly elevated and separated from the dorsum by an irregular carina; tegulae punctate and pale pubescent except the small, median disk and outer margin glabrous, impunctate; posterior margin of first tergite ferruginous and with a fringe of fulvous pubescence; last abdominal segment blackish, but not deep black, more or less tinged with ferruginous; posterior one-third of last tergite declivous and perpendicular to the anterior two-thirds, the posterior and dorsal surfaces thus formed not separated by a carina nor any sort of elevation, the median, impunctate area terminating at the junction of the dorsal and posterior faces; posterior surface of last tergite finely, longitudinally rugose and with a median, longitudinal carina; postero-lateral tubercles of sixth and seventh sternites small, but distinct; last sternite with a pair of distinct, lateral ridges on the anterior half, the ridges terminating in dentiform tubercles; posterior, inner angle of intermediate coxae not toothed nor tuberculate; calcaria pale; proximal two-thirds of wings subhyaline with a fuscous outer band; cell 2nd $R_1 + R_2$ subtruncate distally; cell R_5 receiving vein M_{3+4} slightly

beyond the middle; cell R_4 present but less distinct than R_5 and receiving vein M_2 slightly beyond the middle. Length, 13 mm.

Holotype. ♂, Cat. no. 52133 U.S. National Museum, Brazil : Pernambuco, 29.xii.1882.

Paratypes. 2 ♂♂, Brazil : Pernambuco, 29.xii.1892; ♂, Chaves, Island of Marajo, Para, 5.xii.1901 (*Ducke*).

Related to *scoparia* and allies, but the last abdominal tergite and the clypeus are very distinct as described above; closely related to the following species from which it differs in having the first abdominal segment almost entirely black.

Timulla (Timulla) bellatula sp. n.

Male. Head, thorax and legs black, clothed with sparse, pale pubescence, except the mesonotum and anterior, median area of scutellum with sparse, black pubescence, the front, genae, pronotum posteriorly, dorsum of propodeum and elevated areas of mesopleura with thicker, appressed, pale pubescence; abdomen entirely ferruginous, the last segment slightly infuscated, the tergites clothed with fulvous pubescence; otherwise the same as *leucippe*, including the form of the clypeus and the last abdominal tergite, except the tegulae somewhat more closely punctate and thickly, pale pubescent. Length, 15 mm.

Holotype. ♂, Brazil : Minas Geraes, Pirapora, 11–13.xi.1919, in Cornell University collection.

Paratype. ♂, Brazil : Minas Geraes, Pirapora, 11–13.xi.1919.

Closely related to *leucippe* with differences as stated above.

Timulla (Timulla) factiosa sp. n.

Male. Head, thorax and legs black, clothed with sparse, pale pubescence, except the mesonotum and anterior, median area of scutellum with sparse, black pubescence, the front, genae, pronotum posteriorly, dorsum of propodeum and elevated areas of mesopleura also with thick, appressed, pale pubescence; abdomen entirely ferruginous, the tergites clothed with fulvous pubescence; mandibles strongly excised beneath; clypeus elevated posteriorly, the elevated, posterior margin evenly arcuate; scape very indistinctly bicarinate beneath, with only one distinct carina; first segment of flagellum slightly, but distinctly longer than the second; first and second flagellar segments tinged with yellow beneath; antennal scrobes carinate above; ocelli small, the distance between the eye margins and the lateral ocelli equal to three times the greatest diameter of the latter; parapsidal furrows present and deep on the posterior two-thirds of mesonotum; scutellum gibbose; posterior face of propodeum elevated and separated from the dorsum by an irregular carina; tegulae glabrous, impunctate, except the anterior and inner margins, and the posterior, inner quadrant punctate and pale pubescent; posterior third of last tergite declivous and perpendicular to the anterior two-thirds, the median, impunctate area terminating at a very short, transverse carina at the junction of the two surfaces; declivous face of last tergite with a pair of lateral, oblique carinae converging towards the posterior margin; postero-lateral tubercles of sixth and seventh sternites very weak, obscure; lateral ridges on anterior half of last sternite terminating posteriorly in a pair of long, spine-like teeth directed posteriorly; posterior, inner angle of intermediate coxae with a blunt tooth; calcaria pale; proximal half of wings hyaline, the distal half fuscous; cell 2nd $R_1 + R_2$ truncate at the tip; cell R_5 receiving vein M_{3+4} distinctly beyond the middle; cell R_4 present but less distinct than R_5 and receiving vein M_2 well beyond the middle. Length, 14 mm.

Holotype. ♂, Cat. no. 52134 U.S. National Museum, Argentine Republic : Rio Chico, 6.xii.1929.

Paratypes. ♂, Argentine Republic: Ledesma, 10.i.1930 (*H. A. Jaynes*); ♂, Argentine Republic: Jujuy; ♂, Rio Dulce, Chaco de Santiago del Estero; ♂, Santiago del Estero; ♂, Tucuman.

Possibly related to *leucippe*. Very distinct in the form of the last tergite, in having the first flagellar segment slightly longer than the second and both tinged with yellow beneath, and in the long teeth terminating the lateral ridges of the last sternite.

Timulla (*Timulla*) *rufogastra* (Lepeletier).

Pl. 6, fig. 107, ♂.

Mutilla rufogastra Lepeletier, 1845, *Hist. Nat. Ins., Hymén.* **3** : 629, male.
Mutilla dimidiata Sichel and Radoskowski, 1869, *Horae Soc. ent. ross.* **6** : 285, male (in part, citation of *rufogastra*).
Mutilla mediata Gerstaecker, 1874, *Arch. Naturg.* **40** : 323, male (in part, Cayenne and Colombia specimens).
Mutilla dimidiata Dalle Torre, 1897, *Cat. Hymen.* **8** : 31, male (in part, citation of *rufogastra*).
Mutilla rufiventris Zavattari, 1910, *Ann. Mus. zool. Univ. Napoli* **3** (9) : 9, male (*nec* Klug).
Timulla (*Timulla*) *rufogastra* Mickel, 1937, *Rev. Ent. Rio* **7** : 174–175, male.

Lectotype. ♂, Amer. mer., in Spinola collection, Torino, Italy.

Specimens examined. ♂, French Guiana: Roches de Kourou; 6 ♂♂, Cayenne; 3 ♂♂, Venezuela; ♂, Trinidad, B.W.I., 24.iv.1933 (*D. Vesey-FitzGerald*); 2 ♂♂, Trinidad, B.W.I., 26.v.1925 (*H. M. Rohwer*); ♂, Maracas valley, 26.v.1936 (*N. A. Weber*); ♂, Trinidad, B.W.I., 10.viii.1921 (*A. Busck*); ♂, Trinidad, B.W.I., v.1924 (*L. E. Cheesman*); ♂, Trinidad, B.W.I.; ♂, Colombia: Rio Frio, Magdalena, 13.vii.1927 (*G. Salt*); 2 ♂♂, Muzo, Boyaca, 1936 (*J. Bequaert*); ♂, Colombia.

Zavattari (1910) called attention to the fact that Lepeletier's type of *rufogastra* was in the Spinola collection at Torino, Italy, and that it was not the same as *dimidiata* Lep. from India. He stated that it was a synonym of *rufiventris* Klug. Both the types of *rufogastra* Lep. and *rufiventris* Klug have been examined by me and found to be very different in the form of the clypeus and the last abdominal tergite. *T. rufogastra* is a good species which has long gone unrecognised. The two specimens from Colombia and Cayenne recorded by Gerstaecker (1874) as *mediata* have been examined and belong here.

The species is easily recognised by the form of the last abdominal tergite, the entirely ferruginous abdomen and the form of the clypeus; the median area of the latter is elevated posteriorly, the elevated, posterior margin slightly reflexed medially and varying from evenly arcuate to subangulate medially.

Timulla (Timulla) hedone sp. n.

Male. Head, thorax, last two abdominal segments and legs, black; remainder of abdomen ferruginous and clothed with fulvous pubescence; last two abdominal segments clothed with black pubescence; head, thorax and legs clothed with sparse, pale pubescence, except the mesonotum and anterior, median area of scutellum with sparse, black pubescence, the front, pronotum posteriorly, dorsum of propodeum and elevated areas of mesopleura with thicker, appressed, pale pubescence; mandibles deeply excised beneath; median, glabrous area of clypeus almost flat, only very slightly elevated posteriorly, the posterior margin subarcuate; scape distinctly bicarinate beneath; first and second flagellar segments equal in length; antennal scrobes carinate above; ocelli large, the distance between the eye margins and the lateral ocelli equal to about twice the greatest diameter of the latter; parapsidal furrows present and deep on the posterior two-thirds of mesonotum; scutellum

gibbose; posterior face of propodeum very slightly elevated and separated from the dorsum; tegulae glabrous, impunctate for the most part, only the narrow, anterior and inner margins punctate and pale pubescent; second tergite with large punctures, sparse medially, close laterally; median, impunctate area terminating at an inverted, U-shaped carina, the posterior margin of the tergite with a very short, median, longitudinal carina; postero-lateral tubercles of sixth and seventh sternites very distinct; last sternite with a pair of distinct, lateral ridges on the anterior half, the ridges terminating in dentiform tubercles; posterior, inner angle of middle coxae not dentate nor tuberculate; proximal third of wings subfuscous; the distal two-thirds fuscous; cell 2nd $R_1 + R_2$ truncate distally; cell R_5 receiving vein M_{3+4} at the middle; cell R_4 present but less distinct than R_5 and receiving vein M_2 well beyond the middle. Length, 14 mm.

Holotype. ♂, Cat. no. 52135 U.S. National Museum, PERU: Trujillo, 26.xii.1930 (*H. A. Jaynes*).

Paratypes. ♂, PERU: Lima; ♂, Pacasmayo, 9.xii.1930 (*H. A. Jaynes*).

Related to *rufogastra*; the form of the last tergite is practically the same as in that species. Easily recognised by the almost flat clypeus, the last two abdominal segments black, and the shape of the last abdominal tergite.

Timulla (*Timulla*) *thura* (Cameron). (New combination.)

Mutilla thura Cameron, 1894, *Biol. Centr.-Amer., Hymen.* **2**: 289, male.
Mutilla thura Dalle Torre, 1897, *Cat. Hymen.* **8**: 92, male.
Mutilla thura André, 1903, *Gen. Ins.* **11**: 42, n. 64, male.

Type. ♂, PANAMA (*Boucard*), in British Museum (Natural History).

Specimens examined. ♂, COLOMBIA: Rio Frio, Magdalena, 26.vii.1927 (*G. Salt*).

The terminal, abdominal segments of the type specimen are missing, a fact mentioned by Cameron in the original description. The species has two characteristics, however, that ensure its identification without a knowledge of the structure of terminal segments, the peculiar shape of the enclosed area of propodeum which is much narrower anteriorly than elsewhere, and the ferruginous intermediate and posterior tarsi. The Colombia specimen was compared with the type and found to agree in every particular. The terminal segments of the abdomen of the Colombia specimen are like those of *rufogastra* (Lep.). Differs from the latter in the ferruginous tarsi and the enclosed area of propodeum.

Timulla (Timulla) oxyrae sp. n.

Male. Head and thorax entirely black; abdomen entirely ferruginous; legs dark mahogany red; head, thorax and legs clothed with sparse, pale pubescence, except the mesonotum and median, anterior area of scutellum with sparse, black pubescence, the front, pronotum posteriorly, dorsum of propodeum and elevated areas of mesopleura with somewhat thicker, appressed, pale pubescence; abdominal tergites clothed with fulvous pubescence; mandibles strongly excised beneath; median, glabrous area of clypeus elevated posteriorly and produced into a prominent, reflexed, spiniform process; scape distinctly bicarinate beneath; first and second flagellar segments equal in length; antennal scrobes carinate above; ocelli small, the distance between the eye margins and lateral ocelli equal to three times the greatest diameter of the latter; parapsidal furrows present and deep on the posterior two-thirds of mesonotum; scutellum gibbose; posterior face of propodeum very slightly elevated and separated from the dorsum; tegulae glabrous, impunctate, except the anterior and inner margins punctate and pale pubescent: median, impunctate area of last tergite terminating at the top of a ∩-shaped carina, the concave area within the

limits of the carina with a median, longitudinal carina extending to the posterior margin of the tergite; postero-lateral tubercles on sternites six and seven weak; last sternite with a pair of very weak, lateral ridges on the anterior half; posterior, inner angle of middle coxae not toothed nor tuberculate; calcaria pale; proximal third of wings subhyaline, the distal two-thirds fuscous; cell 2nd $R_1 + R_2$ subtruncate distally; cell R_5 receiving vein M_{3+4} slightly beyond the middle; cell R_4 present but less distinct than R_5 and receiving vein M_2 distinctly beyond the middle. Length, 8 mm.

Holotype. ♂, Cat. no. 52136 U.S. National Museum, Brazil: near Para (*Miss H. B. Merrill*).

Closely related to *rufogastra* (Lepeletier) and has the last abdominal tergite similar in form; differs in having the clypeus prominently produced at the posterior middle into a spiniform process.

Timulla (Timulla) valeria sp. n.

Male. Head, thorax, anterior half of first abdominal segment, last abdominal segment entirely, and legs black; remainder of abdomen ferruginous and clothed with fulvous pubescence; head, thorax and legs clothed with sparse, pale pubescence except the mesonotum and anterior, median area of scutellum with sparse, black pubescence, the front genae, pronotum posteriorly, dorsum of propodeum slightly, and elevated areas of mesopleura with thicker, appressed, pale pubescence; mandibles strongly excised beneath; clypeus elevated posteriorly, the posterior, elevated margin evenly arcuate; scape distinctly bicarinate beneath; first and second flagellar segments equal in length; antennal scrobes very weakly and obscurely carinate above; ocelli small, the distance between the eye margins and the lateral ocelli equal to about three times the greatest diameter of the latter; parapsidal furrows present and deep on posterior two-thirds of mesonotum; scutellum gibbose; posterior face of propodeum elevated and separated from the dorsum by an irregular carina; tegulae glabrous, impunctate, except the anterior and inner margins, and the posterior, inner quadrant punctate and pale pubescent; median, impunctate area of last tergite terminating at the top of a ∏-shaped carina, the enclosed, concave space within the arms of the carina with a median, longitudinal carina extending to the posterior margin; postero-lateral tubercles of sixth and seventh sternites weak and obscure; lateral ridges of last sternite weak, not terminating in dentiform tubercles; posterior, inner angle of middle coxae with a slight tubercle; calcaria pale; proximal third of wings subhyaline, the distal two-thirds fuscous; cell 2nd $R_1 + R_2$ subtruncate; cell R_5 receiving vein M_{3+4} slightly beyond the middle; cell R_4 present but less distinct than R_5 and receiving vein M_2 well beyond the middle. Length, 15 mm.

Holotype. ♂, British Guiana: Kamakusa, i.1923 (*H. Lang*), in University of Minnesota collection.

Paratypes. ♂, Brazil: Obidos, Para, 24.vii.1902 (*Ducke*); 4 ♂♂, Obidos, Para (*Ducke*); 2 ♂♂, Para, vii.1903 (*Ducke*); ♂, French Guiana: Nouveau Chantier, Bas-Moroni, ii.; ♂, Nouveau Chantier; ♂, Charvein; ♂, Gourdonville; ♂, French Guiana; ♂, Surinam: Kwakoegron, Saramacoa River, 15.vi.1927; ♂, Surinam; ♂, British Guiana: Kamakusa (*H. Lang*); ♂, Tumatumari, vii.1923 (*F. X. Williams*); ♂, Kerikabaru, 26.x.1932 (*D. Vesey-FitzGerald*); ♂, Venezuela; ♂, Colombia: Rio Dagua, v.1909; 3 ♂♂, Ecuador: Bucay, 4.x.1922 (*F. X. Williams*).

Related to *rufogastra* and has the form of the last abdominal tergite similar. Differs in having the posterior, elevated margin of the clypeus evenly arcuate and scarcely reflexed medially, in having the last abdominal segment entirely and the first abdominal segment in part black. The first abdominal segment

varies in colour from almost entirely ferruginous to black with only the posterior margin of the tergite ferruginous. The specimens from French Guiana also have the sixth tergite more or less infuscated. The length varies from 11 to 15 mm.

Timulla (Timulla) tarpeia sp. n.

Male. Head, thorax, first and last abdominal segments and legs, black; remainder of abdomen ferruginous, except the sixth tergite blackish medially; head, thorax and legs clothed with sparse, pale pubescence, except the mesonotum and anterior, median area of scutellum with sparse, black pubescence, the front, genae, pronotum posteriorly, dorsum of propodeum slightly and elevated areas of mesopleura with somewhat thicker, pale, appressed pubescence; abdominal tergites with fulvous pubescence; mandibles strongly excised beneath; median area of clypeus elevated posteriorly, the posterior, elevated margin evenly arcuate and reflexed; scape distinctly bicarinate beneath; first and second flagellar segments equal in length; antennal scrobes carinate above; ocelli small, the distance between the eye margins and the lateral ocelli equal to slightly more than three times the greatest diameter of the latter; parapsidal furrows present and deep on posterior two-thirds of mesonotum; scutellum gibbose; posterior face of propodeum not distinctly elevated and separated from the dorsum; tegulae glabrous, impunctate, except the anterior and inner margins punctate and pale pubescent; median, impunctate area of last tergite terminating at a very short, transverse carina; tergite beyond the carina slightly concave, finely longitudinally rugose and with a median, longitudinal carina extending to the posterior margin; sixth sternite without postero-lateral tubercles; seventh sternite with a pair of weak, lateral ridges; last sternite with a pair of distinct, lateral ridges on the anterior half, the ridges not elevated posteriorly; posterior, inner angle of middle coxae not toothed nor tuberculate; calcaria pale; proximal half of wings subhyaline, the distal half subfuscous; cell 2nd $R_1 + R_2$ truncate distally; cell R_5 receiving vein M_{3+4} distinctly beyond the middle; cell R_4 present but less distinct than R_5 and receiving vein M_2 distinctly beyond the middle. Length, 11 mm.

Holotype. ♂, Cat. no. 52137 U.S. National Museum, Brazil : Rio Madeira, Abuna (*Mann and Baker*).

Related to the *rufogastra* group, but differs in the short, transverse carina at the posterior margin of the median, impunctate area of the last tergite. The last tergite is similar to that of the following species *buscki*. It is not the same as that of *sulcata* and allies. In *sulcata* and others the median, impunctate area is definitely emarginate at the posterior margin; in *tarpeia* the median, impunctate area is definitely not emarginate when seen from above; the carina in *tarpeia* is like that of *rufogastra* if the arms were removed and only the dorsal part of the carina left. *T. tarpeia* is also characterised by the absence of postero-lateral tubercles on the sixth sternite.

Timulla (Timulla) buscki sp. n.

Pl. 6, fig. 108, ♂.

Male. Head, thorax and legs black, except the tarsi slightly tinged with ferruginous; abdomen entirely ferruginous and the tergites clothed with fulvous pubescence; head, thorax and legs clothed with sparse, pale pubescence, except the mesonotum and median, anterior area of scutellum with sparse, black pubescence, the front, genae, pronotum posteriorly, dorsum of propodeum slightly and elevated areas of mesopleura with thicker, pale, appressed pubescence; mandibles strongly excised beneath; clypeus elevated posteriorly, the posterior, elevated margin evenly arcuate and not reflexed; scape distinctly

bicarinate beneath; first and second flagellar segments equal in length; antennal scrobes carinate above; ocelli small, the distance between the eye margins and the lateral ocelli equal to about three times the greatest diameter of the latter; parapsidal furrows present and deep on posterior two-thirds of mesonotum; scutellum gibbose; posterior face of propodeum slightly elevated and separated from the dorsum; tegulae glabrous, impunctate, except the anterior and inner margins and the posterior, inner quadrant punctate and pale pubescent; median, impunctate area of last tergite terminating at a transverse carina; the latter viewed from the rear arcuate and sharp; tergite beyond the carina concave and with a median, longitudinal carina extending to the posterior margin; postero-lateral tubercles entirely absent on the sixth sternite; seventh sternite with a pair of weak, lateral ridges; last sternite with a pair of distinct, lateral ridges on the anterior half, the ridges not elevated posteriorly; posterior, inner angle of middle coxae not toothed nor tuberculate; calcaria pale; proximal half of wings subhyaline, the distal half subfuscous; cell 2nd $R_1 + R_2$ truncate distally; cell R_5 receiving vein M_{3+4} distinctly beyond the middle; cell R_4 present but less distinct than R_5 and receiving vein M_2 well beyond the middle. Length, 11 mm.

Holotype. ♂, Cat. no. 52138 U.S. National Museum, Panama: Taboga Island, 22.ii.1912 (*A. Busck*).

Paratypes. 2 ♂♂, Panama: Taboga Island, 26 and 27.ii.1912 (*A. Busck*); 3 ♂♂, Canal Zone: Ancon, 29.iii. and 9.iv.1926 (*C. T. Greene*); ♂, Panama (*Boucard*).

Related to *tarpeia*; differs in having the abdomen entirely ferruginous and in the arcuate carina on the last abdominal tergite at the posterior margin of the median, impunctate area. There is a tendency for the tarsi to be more or less ferruginous, one specimen from Canal Zone having the tarsi distinctly ferruginous.

Timulla (*Timulla*) *talus* (Cameron). (New combination.)

Mutilla talus Cameron, 1894, *Biol. Centr.-Amer., Hymen.* **2**: 282, male.
Mutilla clutha Cameron, 1894, *Biol. Centr.-Amer., Hymen.* **2**: 283, male (**syn. n.**).
Mutilla clutha Dalle Torre, 1897, *Cat. Hymen.* **8**: 25, male.
Mutilla talus Dalle Torre, 1897, *Cat. Hymen.* **8**: 90, male.
Mutilla clutha André, 1903, *Gen. Ins.* **11**: 41, n. 13, male.
Mutilla talus André, 1903, *Gen. Ins.* **11**: 42, n. 62, male.

The following redescription is drawn from Cameron's type of *talus*:

Male. Head, thorax, legs and first abdominal segment, black; remainder of abdomen ferruginous; head, thorax and legs clothed with pale pubescence, thick and appressed on the front, genae, pronotum, dorsum of propodeum anteriorly and elevated areas of mesopleura, except the mesonotum (excluding the anterior margin) with sparse, black pubescence; ferruginous areas of abdomen clothed with fulvous pubescence; mandibles strongly excised beneath; median, glabrous area of clypeus elevated posteriorly, the smooth, polished area slightly concave, the posterior margin of the polished area arcuate; anterior margin of clypeus straight, not at all dentate; scape bicarinate beneath, the two carinae equally developed; first segment of flagellum slightly but distinctly longer than the second; antennal scrobes weakly carinate above; ocelli moderate in size, the distance between the eye margins and the lateral ocelli about three times the diameter of the latter; scutellum convex, not at all gibbose, with large, more or less confluent punctures throughout; enclosed area of propodeum elongate, about four times as long as broad, the sides parallel, elevated posteriorly at the tip into a distinct tubercle; dorsum and posterior face of propodeum not separated by a raised line; tegulae smooth and polished, impunctate, the anterior and inner margins pale pubescent; posterior margin of first tergite ferruginous; second tergite with the disk glabrous, impunctate, with moderate, distinct punctures laterally, the posterior

fifth slightly depressed and with moderate, shallow punctures; median, impunctate area of last tergite terminating at a short, arcuate, transverse carina beyond which the tergite is concave, the concavity with a short, median, longitudinal carina terminating at the posterior margin but not extending anteriorly to the transverse carina; first sternite with a median, longitudinal carina on the anterior two-thirds; second sternite with scattered, moderate punctures; sternites six and seven with small, obscure, postero-lateral tubercles; last sternite with a pair of anterior, oblique, polished ridges not at all prominent; intermediate coxae with a small, but distinct, acute tooth within near the apex; calcaria pale; wings subfuscous; cell 2nd $R_1 + R_2$ truncate distally; cell R_5 receiving vein M_{3+4} at about the middle; cell R_4 present but less distinct than R_5 and receiving vein M_2 at about two-thirds the distance from base to apex. Length, 12 mm.

Type. ♂, Panama: Bugaba, 800–1500 ft. (*Champion*), in British Museum (Natural History). The type of *clutha* Cameron is in the same collection.

Specimens examined. ♂, Panama: Volcan de Chiriqui (*Champion*); ♂, Costa Rica: La Caja (*Paul Serre*); ♂, Mexico: Teapa, Tabasco, iii. (*H. H. Smith*).

The types of *talus* and *clutha* were compared and found to be identical. The specimen of *clutha* is slightly smaller, but otherwise there are no distinctive differences. The form of the last tergite, the flattened, slightly convex scutellum, and the enclosed area of propodeum elevated posteriorly into a tubercle readily distinguish this species.

Timulla (*Timulla*) *manga* (Cresson). - (New combination.)

Pl. 1, fig. 19, ♀.

Mutilla manga Cresson, 1902, *Trans. Amer. ent. Soc.* **28** : 60, male.
Mutilla manga André, 1903, *Gen. Ins.* **11** : 42, n. 37, male.

The female, heretofore undescribed, is as follows:

Female. Entirely piceous to black, except antennae yellowish, the tibiae, tarsi, propleura and venter of abdomen tinged with ferruginous; head and thorax densely punctured, the thorax more coarsely so; dorsum of thorax parallel sided, scarcely emarginate medially; scutellar scale present; second abdominal tergite coarsely punctured; tergites one to five each with a pair of pale pubescent spots at the posterior margin and the second tergite also with a pair of elongate, anterior, pale pubescent spots, thus the abdomen above with two rows of six pale pubescent spots; pygidial area glabrous. Length, 5·5 mm.

Type. ♂, Brazil: Chapada, Matto Grosso, iv., in Carnegie Museum, Pittsburg, Pa.

Allotype. ♀ (*in copula* with ♂), Bolivia: Santa Cruz de la Sierra, 450 m., xi.1910 (*J. Steinbach*), in Carnegie Museum, Pittsburg, Pa.

Specimens examined. ♂, Brazil: Mineiro, Goyaz; 5 ♂♂, Jatahy, Goyaz; 3 ♂♂, Rio Verde, Goyaz; 3 ♂♂, Goyaz; ♂, Bolivia: Santa Cruz (*J. Steinbach*); ♀, Buenavista, near Santa Cruz (*J. Steinbach*); ♂, Peru: Chanchamayo (*W. F. H. Rosenberg*).

The male is related to *macapa* Cresson and other species in this group with the triangular depression on the last abdominal tergite. It differs from all those with the terminal abdominal segments black in having the anterior abdominal segments clothed and fringed with fulvous hairs. The female is related to *atriceps* (Smith) and others with the pygidium glabrous. It differs in being almost entirely black with yellowish antennae.

Timulla (*Timulla*) *macapa* (Cresson). (New combination.)

Mutilla macapa Cresson, 1902, *Trans. Amer. ent. Soc.* **28** : 59, male.
Mutilla macapa André, 1903, *Gen. Ins.* **11** : 42, n. 36, male.

Type. ♂, Chapada, Brazil : Matto Grosso, in Carnegie Museum, Pittsburg, Pa.

No specimens in addition to the original material have been seen. *T. macapa* differs from *manga* in having the pubescence of the ferruginous abdominal tergites pale and the fringe of hairs at the posterior margin of those segments black. It is also characterised by the large, triangular, elevated, posterior surface of the clypeus which is higher than wide with the posterior, median angle of the elevated area reflexed into a small, nasutiform process.

Timulla (Timulla) spiniclypeata sp. n.

Pl. 8, fig. 125, ♂; pl. 1, fig. 20, ♀.

Male. Head, thorax, last three abdominal segments and legs, black, the fourth abdominal segment more or less blackish and the first three abdominal segments ferruginous; head, thorax and legs clothed with pale pubescence, thicker and appressed on the front, genae, pronotum, dorsum of propodeum and elevated areas of mesopleura, except a transverse band between the eyes through the ocellar area with fuscous pubescence and the mesonotum and anterior, median area of scutellum with sparse, black pubescence; all the abdominal tergites with a black, posterior marginal fringe of hairs, the ferruginous segments also with sparse, pale pubescence and the black segments with black pubescence and a few intermixed pale hairs; all the sternites with pale pubescence; mandibles strongly excised beneath; median, glabrous area of clypeus triangular, transversely concave, the median, posterior angle of the elevated portion reflexed and produced into a spine between the bases of the antennae; scape distinctly bicarinate beneath; first and second flagellar segments equal in length; antennal scrobes carinate above; ocelli small, the distance between the lateral ocelli and the eye margins three and one-half times the diameter of the former; parapsidal furrows very shallow on the anterior third of mesonotum, almost obsolete; scutellum gibbose; posterior face of propodeum slightly elevated with respect to the dorsum, appearing as a distinct area; enclosed area of propodeum elongate, about four times as long as broad, subparallel-sided and rounded posteriorly; tegulae glabrous, impunctate, except the anterior and inner margins slightly punctate and clothed with appressed, pale pubescence as well as a few erect, black hairs; second tergite with moderate punctures, sparse on the disk, closer at the sides; median, impunctate area of last tergite terminating at the anterior angle of a deep, triangular depression, the posterior half of the latter with a median carina; first sternite with a median, longitudinal carina on the anterior two-thirds; second sternite with moderately large punctures, well separated medially, closer laterally; sternites six and seven with distinct, but not large, postero-lateral tubercles; last sternite with a pair of lateral ridges on the anterior half, each ridge terminating in an obscure tubercle; intermediate coxae slightly tuberculate at the posterior inner margin; calcaria pale; proximal third of wings hyaline, the distal two-thirds fuscous and with the distal fourth darker fuscous than elsewhere; cell 2nd $R_1 + R_2$ broadly, squarely truncate distally; cell R_5 receiving vein M_{3+4} approximately at the middle; cell R_4 present but less distinct than R_5 and receiving vein M_2 distinctly beyond the middle. Length, 13 mm.

Female. Head, terminal abdominal segments and legs, black; antennal tubercles, first three antennal segments, thorax entirely and first two abdominal segments, ferruginous; front and vertex with sparse, black pubescence, the genae with sparse, pale pubescence; thorax clothed with pale pubescence, except the dorsum with sparse, recumbent, ferruginous pubescence; all the abdominal tergites clothed with sparse, black pubescence, except for

the pale pubescent markings as follows: a pair of transverse spots at the posterior margin of the first tergite; a pair of lines on the second tergite not reaching the anterior margin and extending slightly beyond the middle of the tergite; a pair of transverse spots at the posterior margin of the second tergite separated by a distance equal to or greater than the transverse diameter of the spots; and a pair of elongate, rectangular spots on tergites three to five; antennal scrobes carinate above; dorsum of thorax with large, dense, confluent punctures, the sides of the dorsum parallel, not noticeably emarginate medially; thorax not broader posteriorly than anteriorly; scutellar scale present and distinct; dorsum and posterior face of propodeum deeply punctato-reticulate; lateral margins of posterior face of propodeum with a pair of distinct teeth posteriorly near the union of thorax and abdomen; sides of propodeum moderately punctate, the punctures sparse anteriorly, close posteriorly; second tergite with moderately large punctures visible through the pubescence and interspersed with fine punctures; pygidial area glabrous, the anterior half obscurely, longitudinally rugose; first sternite with a median, longitudinal carina anteriorly; second sternite with moderately large punctures, sparse medially, close at the sides; calcaria pale. Length, 8 mm.

Holotype and allotype. ♂ and ♀ respectively, Brazil: São Paulo (*Schrottky*), in Museo civico de Storia Naturale, Genoa, Italy.

Paratypes. 2 ♀♀, Brazil: Campinas, ii. (*F. X. Williams*); ♂, ♀, Campinas, iii. (*F. X. Williams*); ♂, Campinas, 1903 (*Hempel*); ♂, Barbacena, 30.x.1905 (*Ducke*); ♀, São Paulo, 10.ii.1921; ♀, Ypirango, São Paulo, iii.1906 (*J. Lima*); ♀, Franca, São Paulo, x.1910 (*E. Garbe*); ♂, Affonso Claudio, Laranja da Terra, Espirito Santo, 20.ix.1928 (*O. Conde*); ♀, Theresopolis, Rio de Janeiro (*Goeldi*); ♀, Minas Geraes (*Reinhardt*); ♀, Minas Geraes; 2 ♂♂, ♀, Jatahy, Goyaz; 6 ♂♂, 9 ♀♀, Goyaz; ♀, Brazil; ♀, without data.

The male is related to *macapa* (Cresson), but the glabrous portion of the clypeus is almost an equilateral triangle with the median, posterior angle reflexed and forming a spine. The number of ferruginous segments in the abdomen varies from three to five, although most of the specimens have the fourth segment more or less blackish. The female is very close to *atriceps* (Smith), but has the spots at the posterior margin of the second tergite more rectangular and more widely separated. Most of the specimens have the legs more or less ferruginous, especially the femora and tibiae. The scape also varies in the degree of ferruginous, in some very dark ferruginous, in others bright ferruginous.

Timulla (Timulla) luederwaldti sp. n.

Male. Black, except the first, second and anterior half of the third abdominal segments, ferruginous; head clothed with pale pubescence, sparse on the genae, sparse and somewhat intermixed with fuscous hairs on the vertex, thick and appressed on the front; thorax with very sparse, erect, pale hairs, except the posterior margin of pronotum with appressed, pale pubescence, the mesopleura with thicker, erect, pale hairs, and the posterior three-fourths of the mesonotum as well as the anterior half of scutellum with sparse, black pubescence; first and second abdominal tergites each with a posterior marginal fringe of black hairs, the first five abdominal tergites clothed otherwise with sparse, pale hairs; last two tergites clothed with sparse, black hairs; mandibles strongly excised beneath; median, glabrous area of clypeus triangular, as broad as long, the posterior angle produced into a short, nasutiform process; scape bicarinate beneath; antennal scrobes carinate above; a median, glabrous, longitudinal line on the vertex immediately behind the posterior ocelli extending almost two-thirds the distance to the posterior margin of the head; ocelli small, the distance between the eye margins and the posterior ocelli equal to approximately three

and one-half times the greatest diameter of the latter; parapsidal furrows present and deep on the posterior two-thirds of mesonotum; scutellum gibbose; posterior face of propodeum elevated and higher than the dorsum and separated from the dorsum by an irregular carina; posterior half of sides of propodeum strongly punctato-reticulate, the anterior half micro-reticulate; tegulae glabrous, impunctate, except the anterior and inner margins punctate and black pubescent; second tergite with moderate punctures, sparse on the disk, becoming close laterally and smaller and closer on the slightly depressed, posterior fifth; median, glabrous area of last tergite terminating at the anterior angle of a shallow triangular depression, the latter with a median, longitudinal carina extending from the anterior angle to the posterior margin of the tergite; first sternite with a median, longitudinal carina on the anterior half; second sternite with large punctures, sparse medially, close at the sides; sternites six and seven with obscure, postero-lateral tubercles; last sternite with a pair of lateral, low ridges on the anterior half, the ridges not prominent nor strongly elevated posteriorly; calcaria pale; wings hyaline on the proximal half, fuscous on the distal half and with a darker, outer marginal band; cell 2nd $R_1 + R_2$ squarely truncate distally, slightly more than twice as long as wide; cell R_5 receiving vein M_{3+4} very slightly beyond the middle; cell R_4 present but less distinct than R_5 and receiving vein M_2 slightly before the middle; distance on vein Cu between veins m-cu and $M_4 + Cu_1$ equal to about half the length of the latter. Length, 12 mm.

Holotype. ♂, Brazil: Bahnstation, Raiz de Serra, Santos, xi.1906 (*J. Lima*), in University of Minnesota collection.

Related to *spiniclypeata*, but differs in the form of the triangular depression of the last tergite, the more extended black colour of the abdomen, the less densely, pale pubescent pronotum and mesopleura, and the black pubescent tegulae.

Timulla (Timulla) intermissa sp. n.

Pl. 2, fig, 21, ♀.

Female. Head black, except the mandibles proximally, antennal tubercles, scape, pedicel and first flagellar segment, as well as the flagellum beneath, ferruginous; thorax entirely ferruginous; abdomen ferruginous, except the abdominal tergites medially and the last three segments, black; legs very dark ferruginous, blackish, except the tibiae and tarsi lighter ferruginous; head clothed with sparse, pale pubescence, except the front and almost all of the vertex with sparse, black pubescence, the posterior margin of the vertex with sparse, inconspicuous, pale pubescence; thorax clothed with sparse, pale pubescence, except the dorsum with sparse, ferruginous pubescence; abdomen beneath with sparse, pale pubescence, somewhat thicker at the posterior margin of the sternites; abdominal tergites mostly black pubescent, the pale pubescent markings as follows: a posterior marginal band on the first tergite broadly interrupted medially; second tergite with a pair of narrow, linear, anterior spots extending from the anterior margin to the transverse midline, and a posterior marginal band rather broadly interrupted with black, the band narrow laterally and rather broad each side of the median interruption; tergites three to five each with a pair of elongate, rectangular spots, those on tergite five widely separated; antennal scrobes carinate above; thorax slightly but distinctly narrower posteriorly than anteriorly; lateral margins of dorsum of thorax slightly emarginate at the mesonotal area; scutellar scale present and distinct; mesonotal-scutellar suture distinct; lateral margins of posterior face of propodeum weakly denticulate; sides of propodeum with moderate, distinct punctures, sparse anteriorly, close at the posterior margin; second tergite with moderately large, distinct punctures visible through the pubescence and closely interspersed with fine punctures; pygidium entirely glabrous; second sternite with moderately large,

distinct punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 7·5 mm.

Holotype. ♀, Brazil: Theresopolis, Rio de Janeiro, in British Museum (Natural History).

Paratypes. 2 ♀♀, Brazil: Ypiranga, São Paulo, iii.1906; ♀, Bahnstation, Raiz de Serra, São Paulo, xi.1906 (*J. Lima*); ♀, State São Paulo; ♀, Platastater? Brazil; ♀, Rio Negro, Parana; ♀, Rio Grande do Sul (*Stieglmayr*); ♀, Rio Grande do Sul.

One specimen from Rio Grande do Sul has definite pubescent spots on the vertex. This is probably the female of *luederwaldti*.

Timulla (*Timulla*) *rufiventris* (Klug).

Mutilla rufiventris Klug, 1821, *N. Acta Acad. Nat. Curios.* **10** : 306, T. 21, f. 12, male.
Mutilla lineola Burmeister, 1854, *Abh. naturf. Ges. Halle, SitzBer.* **2** : 27, male (*nec* female).
Mutilla mediata var. *rufiventris* Gerstaecker, 1874, *Arch. Naturg.* **40** : 323, male.
Mutilla mediata var. *rufiventris*, 1897, Dalle Torre, *Cat. Hymen.* **8** : 60, male.
Mutilla rufiventris André, 1903, *Gen. Ins.* **11** : 42, n. 54, male.
Timulla (*Timulla*) *rufiventris* Mickel, 1937, *Rev. Ent. Rio* **7** : 174, male.

Type. ♂, Brazil: Bahia (*Freireyss*), in Zoologisches Museum der Universität, Berlin.

Specimens examined. ♂, Brazil: Sta. Thereza-Gebirge, Rio de Janeiro, 22.xii.1928 (*O. Conde*); ♂, Cantareira, São Paulo, i.1914 (*E. Garbe*); ♂, Novo Friburgo (Burmeister (1854) specimen of *lineola*); ♂, Brazil; specimens 186.1 and 186.2 in Spinola collection, Brazil.

Related to *macapa*, *spiniclypeata* and *luederwaldti*, but differs in having the abdomen entirely ferruginous and clothed with fulvous pubescence. The glabrous area of the clypeus forms an equilateral triangle with the posterior, median angle blunt, not at all prolonged into an acute process as in the following two species.

The specimen recorded by Burmeister (1854) as the male of *lineola* has been examined and found to be the same as this species. The specimens recorded by Ashmead (1900) from the island of St. Vincent, B.W.I., as this species are not *rufiventris* (Klug) but are related to *mediata* (Fabr.) and *proclivis*. They are described as the new species *ashmeadi* in this paper. The specimens determined by Cresson (1902) as this species represent two new species described herein as *atricornis* and *corumba*.

Timulla (Timulla) nasica sp. n.

Male. Head, thorax and legs, black, the abdomen entirely ferruginous; head clothed with pale pubescence, the front and genae with both thick, appressed and sparse, erect, the posterior part of vertex with both sparse, appressed and sparse, erect, the transverse, interocular area through the ocelli with only scattered, erect pale hairs; thorax clothed with pale pubescence, thick and appressed on the pronotum, dorsum of propodeum and mesopleura, except the mesonotum (excluding the median anterior margin) and the median, anterior area of the scutellum with sparse, black pubescence; abdomen clothed above with sparse, fulvous pubescence, beneath with sparse, pale pubescence; mandibles strongly excised beneath and the upper margin with a high, prominent carina; median, glabrous area of clypeus triangular, produced at the posterior, median angle to form a short, stout, nasutiform process; scape distinctly bicarinate beneath, ferruginous at the tip, the antennae black otherwise; first and second segments of flagellum equal in length; antennal scrobes carinate above; ocelli small, the distance between the eye margins and the lateral ocelli

equal to three times the greatest diameter of the latter; parapsidal furrows present and deep on the posterior two-thirds of the mesonotum; scutellum gibbose; dorsum and posterior face of propodeum reticulate, the posterior face only slightly elevated and not distinctly separated from the dorsum; enclosed area of dorsum of propodeum with the anterior third distinctly wider than the posterior two-thirds; posterior half of sides of propodeum punctato-reticulate, the anterior half micropunctate; tegulae glabrous, impunctate, except the anterior and inner margins punctate and pale pubescent; all the tergites sparsely punctured, the second with moderately large punctures, the remaining tergites with smaller punctures, and all the tergites with the punctures closer at the sides than medially; median, impunctate area of last tergite terminating at the anterior angle of a deep, triangular depression, the latter with a median, longitudinal carina extending from the middle of the depression to the posterior margin of the tergite; first sternite with a median, longitudinal carina on the anterior two-thirds; second sternite with moderately large punctures, sparse medially and becoming closer at the sides; sternites six and seven with small, distinct, postero-lateral tubercles; last sternite with a pair of distinct, lateral, glabrous ridges on the anterior half; legs sparsely clothed with pale hairs; calcaria pale; wings more or less fuscous throughout, with a darker band at the outer margin; cell 2nd $R_1 + R_2$ squarely truncate distally; cell R_5 receiving vein M_{3+4} distinctly beyond the middle; cell R_4 present but less distinct than R_5 and receiving vein M_2 at two-thirds the distance from base to apex; vein m-cu meeting vein Cu slightly anterior to the origin of vein $M_4 + Cu_1$. Length, 14 mm.

Holotype. ♂, PARAGUAY: San Bernardino, vii. (*Fiebrig*), in Naturhistorisches Museum, Vienna.

Paratype. ♂, ARGENTINE REPUBLIC: San Ignacio, Haut Parana, Prov. Missiones.

Related to *manga*, from which it differs in having the abdomen entirely ferruginous and in the nasutiform process of the clypeus; also related to *rufiventris*, from which it differs in both the form of the clypeus and the carinate, upper margin of the mandibles; closely related to *amazona*, the following species, from which it differs as indicated in the key.

Timulla (Timulla) amazona sp. n.

Male. Head, thorax and legs, black, the abdomen entirely ferruginous; head clothed with sparse, erect, pale pubescence throughout and also with more or less thick, appressed, pale pubescence on the front, genae and posterior margin of the vertex; thorax clothed with sparse, pale pubescence, except the pronotum and mesopleura also with more or less thick, appressed, pale pubescence and the mesonotum, excluding the extreme anterior margin, and the median, anterior area of scutellum with sparse, black pubescence; abdomen clothed above with sparse, fulvous pubescence; beneath with sparse, pale pubescence; mandibles strongly excised beneath and with a high, prominent carina on the upper margin; median, glabrous area of clypeus triangular, the posterior, median angle produced into a prominent, spiniform process; antennal scrobes carinate above; scape bicarinate beneath and ferruginous at the tip; first and second segments of flagellum equal in length; ocelli small, the distance between the eye margins equal to at least three times the greatest diameter of the latter; parapsidal furrows present and deep on the posterior two-thirds of mesonotum; scutellum gibbose; dorsum and posterior face of propodeum reticulate, the posterior face slightly elevated and distinctly separated from the dorsum by an irregular carina; enclosed area of propodeum almost four times as long as wide, of uniform width throughout and with the sides parallel; posterior two-thirds of sides of propodeum reticulate, the anterior third micropunctate; tegulae glabrous, impunctate, except the anterior and inner margins punctate and pale pubescent; all the tergites

sparsely punctured at the middle and with the punctures closer at the sides; median, impunctate area of last tergite terminating at the anterior angle of a triangular depression, the latter with a median, longitudinal carina extending from the middle of the depression to the posterior margin of the tergite; first sternite with a median, longitudinal carina on the anterior half; second sternite with moderately large punctures, sparse medially, closer at the sides; sixth and seventh sternites with small, distinct, postero-lateral tubercles; last sternite with a pair of distinct, lateral, glabrous ridges on the anterior half; legs sparsely clothed with pale hairs; calcaria pale; wings more or less fuscous throughout, with a darker band at the outer margin; cell 2nd $R_1 + R_2$ squarely truncate distally; cell R_5 receiving vein M_{3+4} slightly before the middle; cell R_4 present but less distinct than R_5 and receiving vein M_2 slightly beyond the middle; vein m-cu meeting vein Cu slightly anterior to the origin of vein $M_4 + Cu_1$. Length, 14 mm.

Holotype. ♂, Brazil: Para (*A. Ducke*), in Naturhistorisches Museum, Vienna.

Paratypes. ♂, Brazil: Para, 16.vii.1901 (*Ducke*); ♂, Para, 22.viii.1902 (*Ducke*); ♂, Santarem, vii.1919 (*S. M. Klages*); ♂, Tapajos.

Related to *nasica*, but differs in the form of the clypeal process, the parallel-sided enclosed area of propodeum and the sparsely pubescent dorsum of propodeum. Also related to *rufiventris* and *manga*, from which it differs as indicated in the key. This is probably the male of *atriceps* (Smith).

Timulla (*Timulla*) *atriceps* (Smith). (New combination.)

Pl. 2, fig. 22, ♀.

Mutilla atriceps Smith, 1855, *Cat. Hymen. Brit. Mus.* **3** : 41, female.
Mutilla atriceps Dalle Torre, 1897, *Cat. Hymen.* **8** : 12, female.
Mutilla atriceps André, 1903, *Gen. Ins.* **11** : 41, no. 4, female.

Type. ♀, Brazil: Santarem, in British Museum (Natural History).

Specimens examined. ♀, Brazil: Mt. Vigia, Para, 21.vi.1932 (*D. Vesey-FitzGerald*); ♀, Para, 28.v.1902 (*Ducke*); ♀, Manaos, viii.1929 (*G. Arnold*); ♀, Manaos, 9.viii.1932 (*D. Vesey-FitzGerald*); ♀, Cayenne.

Very similar to *spiniclypeata*, but differs in having the pair of posterior marginal spots of the second tergite more transverse, much closer together and not rectangular in shape. Since *atriceps* is closely related to *spiniclypeata* the male of which is known, the male of *atriceps* must be similar in some respects to the male of *spiniclypeata*; that is, the form of the last tergite is probably the same in both and the clypeus of the two should be more or less alike. The only male from the Amazon river region similar to *spiniclypeata* is *amazona*, the preceding species. It is therefore probable that *amazona* is the male of *atriceps*.

Timulla (*Timulla*) *bilineipunctata* (Spinola).

Pl. 2, fig. 23, ♀.

Mutilla bilineipunctata Spinola, 1853, *Mem. Acc. Sci. Torino* (2) **13** : 63, female.
Mutilla bilineipunctata Gerstaecker, 1874, *Arch. Naturg.* **40** : 300, female.
Mutilla bilineipunctata Dalle Torre, 1897, *Cat. Hymen.* **8** : 16, female.
Mutilla bilineipunctata André, 1903, *Gen. Ins.* **11** : 41, n. 8, female.
Timulla (*Timulla*) *bilineipunctata* Mickel, 1937, *Rev. Ent. Rio* **7** : 169, female.

Type. ♀, Brazil: Para, in Spinola collection, Museo Zoologia et Anatomia comparata della R. Universitá, Torino, Italy.

Specimens examined. ♀, Brazil: Amazonas.

This species is very close to *atriceps* (Smith). The principal difference is

the presence of a complete, posterior marginal, pale pubescent band on the first tergite; in *atriceps* this band is distinctly interrupted medially with black. Only a single specimen in addition to the type has been seen. A large series of specimens, or a knowledge of the male sex, might show the two to be a single species.

Timulla (Timulla) yungasae sp. n.

Pl. 2, fig. 24, ♀.

Female. Head black, except the antennal tubercles, scape, pedicel, first flagellar segment and mandibles (excluding the tips), all ferruginous; thorax ferruginous, except the posterior face of propodeum with a black, median blotch extending to the posterior margin; abdomen ferruginous, except the median area of the third and fourth tergites infuscated, and the last two segments blackish; legs piceous to black; front and vertex clothed with sparse, black pubescence, except the vertex with a pair of very obscure, pale pubescent spots at the posterior margin; genae with sparse, pale pubescence; dorsum of thorax with sparse, ferruginous pubescence, the posterior face of propodeum and pleura with sparse, pale pubescence; first tergite clothed with sparse, pale pubescence, the remainder of the tergites clothed with sparse, black pubescence, except as follows: first tergite with a pair of transverse, posterior marginal spots; second tergite with a pair of anterior, elongate spots about their width from the anterior margin and not extending beyond the middle of the tergite, their length about twice their width, and a pair of transverse, posterior marginal spots separated by a distance less than their transverse diameter; tergites three to five each with a pair of elongate, rectangular spots; all the sternites with sparse, pale pubescence; legs sparsely clothed with pale pubescence; mandibles edentate at the tip; elevated, posterior margin of clypeus bluntly denticulate; antennal scrobes carinate above; front, vertex and genae with moderate, dense punctures; thorax not broader posteriorly than anteriorly; lateral margins of dorsum of thorax shallowly emarginate at the mesonotal area, almost straight and parallel; dorsum of thorax with moderately large, dense, confluent punctures merging into punctato-reticulate on the dorsum of propodeum and the latter into moderate, distinct punctures posteriorly on the posterior face of propodeum; lateral margins of posterior face of propodeum with a pair of small, distinct teeth posteriorly; scutellar scale present and distinct; sides of propodeum with moderate, distinct punctures throughout; second tergite with large, close punctures visible through the pubescence and interspersed with fine punctures, the large punctures closer at the sides than medially; pygidial area mostly glabrous, impunctate, the anterior fourth obscurely, longitudinally rugose; first sternite with a median, longitudinal carina on the anterior half; second sternite with moderately large, distinct punctures; calcaria pale. Length, 7 mm.

Holotype. ♀, Cat. no. 52139 U.S. National Museum, Bolivia: Espia Rio Bopi, vii. (*Wm. M. Mann*, Mulford Biological Expedition).

Paratypes. 2 ♀♀, Bolivia: Coroico, Yungas; 2 ♀♀, Coroico.

Related to *atriceps* (Smith), which it closely resembles. Differs in having the posterior face of propodeum blotched with black, and the anterior, pale pubescent spots of the second tergite shorter and less linear; in form the latter spots are elongate, twice as long as wide, extending forward from the middle of the tergite two-thirds the distance to the anterior margin.

Timulla (Timulla) steinbachi sp. n.

Pl. 2, fig. 25, ♀.

Female. Head black, except mandibles (excluding the tips), antennal tubercles, scape, pedicel and first flagellar segment, all ferruginous; thorax entirely ferruginous; abdomen

black, except first segment and the sternites ferruginous; legs piceous to black, except the coxae ferruginous and the tarsi slightly tinged with ferruginous; front and vertex with sparse, black pubescence, except the vertex with a pair of posterior, very obscure, pale pubescent spots; genae with sparse, pale pubescence; dorsum of thorax clothed with sparse, ferruginous pubescence; posterior face of propodeum and pleura with sparse, pale pubescence; first tergite and all the sternites with sparse, pale pubescence; pale pubescent markings of the tergites as follows: a pair of transverse, posterior marginal spots on the first tergite; second tergite with a pair of anterior, linear spots approaching, but distinctly separated by their own width from a pair of subtriangular, posterior marginal spots; tergites three to five each with a pair of elongate, rectangular spots; antennal scrobes carinate above; front and vertex with large, dense, confluent punctures, the genae with moderate, close punctures; sides of dorsum of thorax almost straight and parallel, the mesonotal area only slightly constricted, and the thorax not broader posteriorly than anteriorly; scutellar scale present and distinct; dorsum of thorax with large, dense, confluent punctures; dorsum of propodeum deeply punctato-reticulate; posterior face of propodeum with large, dense punctures; lateral margins of posterior face of propodeum dentate posteriorly; sides of propodeum with moderate, distinct punctures; pygidial area glabrous, except the anterior third weakly, longitudinally rugose; first sternite with a median, longitudinal carina on the anterior half; second sternite with large punctures, separated medially, close at the sides; calcaria pale. Length, 9 mm.

Holotype. ♀, Bolivia: Santa Cruz (*J. Steinbach*), in Museum of Comparative Zoology, Cambridge, Mass.

Paratype. ♀, Bolivia: Santa Cruz (*J. Steinbach*).

Related to and similar in appearance to *atriceps* (Smith), but the anterior, pale pubescent lines of the second tergite extend well beyond the middle of the tergite. Also similar to *yungasae* but differs in having the thorax entirely ferruginous, without black on the posterior face of the propodeum, and the anterior, pale pubescent lines of the second tergite are longer and narrower.

Timulla (Timulla) galatea sp. n.

Pl. 2, fig. 26, ♀.

Female. Head black, except the mandibles (excluding the tips), clypeus, antennal tubercles, antennae, thorax, abdomen and legs, all ferruginous; vertex with a pair of subtriangular, posterior, sparsely pale pubescent spots; dorsum of thorax only slightly emarginate at the mesonotal area, the sides almost straight and parallel; thorax not broader posteriorly than anteriorly; scutellar scale present and distinct; abdominal tergites maculated as in *atriceps*, except the anterior, pale pubescent spots of the second tergite broad and ovate, not linear, the spots twice as long as broad and extending slightly beyond the middle of the tergite; distance between the posterior marginal, pale pubescent spots of second tergite less than the transverse diameter of one of the spots; second, third, and fourth tergites with pale, appressed pubescence at the lateral margins; abdominal tergites, except the first, clothed otherwise with sparse, black pubescence; second tergite with large, distinct punctures visible through the pubescence; pygidial area entirely glabrous, unsculptured. Length, 7 mm.

Holotype. ♀, Paraguay: San Bernardino, vii. (*Fiebrig*), in Naturhistorisches Museum, Vienna.

Related and similar in appearance to *atriceps* (Smith), but differs in the large, broad, elongate ovate, anterior, pale pubescent spots of the second tergite, and in the entirely ferruginous clypeus, antennae and legs.

Timulla (Timulla) perexilis sp. n.

Female. Head, median area of abdominal tergite two, and tergites three to six black; antennal tubercles, pedicel, first flagellar segment, thorax entirely, first abdominal segment, lateral areas of tergite two, abdomen beneath anteriorly, and legs entirely, all ferruginous; vertex without pale pubescent spots; lateral margins of dorsum of thorax almost straight and parallel, only slightly emarginate at the mesonotal area; thorax not broader posteriorly than anteriorly; scutellar scale present and distinct; lateral margins of second, third and fourth tergites with appressed, pale pubescence; pale pubescent markings of abdominal tergites as in *atriceps*, except the anterior spots of the second tergite narrow, linear, extending from the anterior margin well beyond the middle of the tergite, the distance between the anterior spots and posterior marginal spots equal to the width of the former; distance between the posterior marginal spots of second tergite slightly less than the transverse diameter of one of the subtriangular spots; pygidial area mostly glabrous, unsculptured. Length, 8 mm.

Holotype. ♀, Brazil: Val du Rio Pardo, São Paulo (*E. Gounelle*), in Muséum National d'Histoire Naturelle, Paris.

Related to *atriceps* (Smith), but has entirely ferruginous legs, and the linear, anterior, pale pubescent spots of second tergite are longer, extending well beyond the middle of the tergite. Differs from *galatea* in the narrow, linear form of the anterior spots of the second tergite.

Timulla (*Timulla*) *exclamationis* (Cresson). (New combination.)

Pl. 2, fig. 27, ♀.

Mutilla exclamationis Cresson, 1902, *Trans. Amer. ent. Soc.* **28** : 17, female.
Mutilla exclamationis André, 1903, *Gen. Ins.* **11** : 42, n. 22, female.

Type. ♀, Brazil: Chapada, Matto Grosso, in Carnegie Museum, Pittsburg, Pa.

The series of specimens from Chapada recorded by Cresson are the only ones that have been seen. This species is related to *atriceps* and the foregoing females, but differs in having the anterior, pale pubescent, linear spots of the second tergite extending to and uniting with the transverse, posterior marginal spots. The pygidial area is entirely glabrous and unsculptured. It is not at all the same as *bilineipunctata* (Spinola) as suggested by Cresson.

Timulla (Timulla) alcimede sp. n.

Pl. 2, fig. 28, ♀.

Female. Head, abdomen and legs black, except the antennal tubercles and scape very dark ferruginous; thorax ferruginous, except the ventral two-thirds of the meso- and metapleura black; head clothed with sparse, pale pubescence, except the front and vertex with sparse, dark ferruginous to black pubescence; thorax with sparse, pale pubescence, except the dorsum of the thorax with sparse, ferruginous pubescence; abdomen beneath with sparse, pale pubescence; abdominal tergites clothed for the most part with black pubescence, the pale pubescent markings as follows: a complete posterior marginal band on the first tergite; second tergite with a pair of narrow, longitudinal stripes extending from the anterior to the posterior margins, and a very narrow line on the posterior margin connecting the stripes with the pale pubescence on the lateral margins, the posterior marginal band entirely obsolete between the longitudinal stripes; tergites three to five each with a pair of linear spots, those on tergite five widely separated; antennal scrobes carinate above;

thorax distinctly broader posteriorly than anteriorly; lateral margins of dorsum of thorax almost straight, scarcely emarginate at the mesonotal area; scutellar scale present and distinct; mesonotal-scutellar suture indistinct; lateral margins of posterior face of propodeum denticulate; sides of propodeum with large, close punctures throughout; second abdominal tergite with moderately large, distinct, close punctures visible through the pubescence and closely interspersed with fine punctures; pygidium mostly glabrous, unsculptured, except anteriorly very weakly, irregularly rugose; second sternite with moderately large, distinct punctures throughout; legs clothed with sparse, pale pubescence; calcaria pale. Length, 8 mm.

Holotype. ♀, Venezuela, in Muséum National d'Histoire Naturelle, Paris.

Probably related to *atriceps*, *exclamationis*, etc. Readily recognised by the black markings on the thoracic pleura, the coarsely punctured sides of propodeum and the pale pubescent pattern of the second abdominal tergite.

Timulla (*Timulla*) *duodecimmaculata* (André). (New combination.)

Pl. 2, fig. 29, ♀.

Mutilla duodecimmaculata André, 1908, *Z. Hymen. Dipt.* **8** : 17, female.

Type. ♀, Argentine Republic: Icano, Chaco de Santiago del Estero, in Muséum National d'Histoire Naturelle, Paris.

Specimens examined. 4 ♀♀, Estancia Geraldina, Pampa-Chaco, Cordoba, 6 and 10.ii.1927 (*J. Hubrich*); 4 ♀♀, Alta Gracia, Cordoba, 9.xii.1920, 4.xii.1921, 20.ii.1922 and 9.iii.1922 (*Carlos Bruch*); 2 ♀♀, Rio Salada, Chaco de Santiago del Estero; ♀, Catamarca.

Related to *atriceps* (Smith) in the entirely glabrous, pygidial area and the pale, pubescent markings of the abdominal tergites. Easily distinguished from *atriceps* by the entirely ferruginous body including the head, although the last two abdominal segments are infuscated, and the much coarser punctation of the dorsum of the thorax.

Timulla (Timulla) intercisa sp. n.

Pl. 2, fig. 30, ♀.

Female. Head black, except the mandibles proximally, the antennal tubercles, scape, pedicel and first flagellar segment, ferruginous; thorax entirely ferruginous; abdomen dark ferruginous, blackish above; coxae, trochanters and femora very dark ferruginous, almost black, the tibiae and tarsi ferruginous; head clothed with sparse, pale pubescence, except the front and most of the vertex with sparse, black pubescence, the vertex also with a pair of inconspicuous, appressed, pale pubescent spots; thorax clothed with sparse, pale pubescence, except the dorsum with sparse, ferruginous pubescence; abdomen beneath clothed with sparse, pale pubescence, slightly thicker at the posterior margin of the sternites; abdominal tergites mostly black pubescent, the pale pubescent markings as follows: a narrow, posterior marginal band very broadly interrupted medially; second tergite with only a pair of longitudinal stripes continuous from the anterior to the posterior margins and broadly expanded at the posterior margin, without a posterior marginal band; tergites three to five each with a pair of elongate, rectangular spots, those on tergite five widely separated; antennal scrobes carinate above; thorax equal in width anteriorly and posteriorly; lateral margins of dorsum of thorax distinctly, shallowly emarginate at the mesonotal area; scutellar scale broad and distinct; mesonotal-scutellar suture distinct; lateral margins of posterior face of propodeum denticulate; sides of propodeum with moderately small, distinct, somewhat close punctures, sparse at the anterior margin; second tergite with

moderate, distinct punctures visible through the pubescence and closely interspersed with fine punctures; anterior half to two-thirds of pygidial area longitudinally rugose, the posterior third to half glabrous; legs clothed with sparse, pale pubescence; calcaria pale. Length, 7·5 mm.

Holotype. ♀, Brazil: Goyaz, in Muséum National d'Histoire Naturelle, Paris.

Paratype. ♀, Brazil: Goyaz.

Similar in appearance to *exclamationis* (Cresson), but has the pygidial area longitudinally rugose. Also resembles *scoparia* (Gerstaecker), but the posterior marginal band of the second tergite is obsolete medially and laterally, leaving only the longitudinal, pale pubescent stripes which are continuous, not constricted posteriorly (as in *exclamationis*) and broadly expanded at the posterior margin.

Timulla (Timulla) bilineatella sp. n.

Pl. 2, fig. 31, ♀.

Female. Head black, except most of mandibles, antennal tubercles, scape, pedicel and most of flagellum, ferruginous; thorax entirely, abdomen, except the last segment, and legs entirely, ferruginous; head clothed with sparse, pale pubescence, except the front and most of the vertex with sparse, blackish pubescence, the vertex with a pair of appressed, pale pubescent spots; thorax clothed with sparse, pale pubescence except the dorsum with sparse, ferruginous pubescence; abdomen beneath clothed with sparse, pale pubescence, somewhat thicker at the posterior margin of the sternites; abdominal tergites clothed largely with sparse, black pubescence, the pale pubescent markings as follows: a posterior marginal band broadly interrupted medially on the first tergite; second tergite with a pair of moderately broad stripes continuous from the anterior to the posterior margin, the stripes distinctly expanded at the posterior margin and slightly bowed out posterior to the transverse midline; tergites three to five each with a pair of elongate, rectangular spots, those on tergite five widely separated; antennal scrobes carinate above; thorax slightly but distinctly narrower posteriorly than anteriorly; lateral margins of dorsum of thorax slightly emarginate at the mesonotal area; scutellar scale present and distinct; mesonotal-scutellar suture distinct; lateral margins of posterior face of propodeum denticulate posteriorly; sides of propodeum with moderate, distinct punctures, sparse anteriorly, close posteriorly; second tergite with moderately large, distinct, close punctures visible through the pubescence and closely interspersed with fine punctures; anterior half of pygidial area distinctly, longitudinally rugose, the posterior half glabrous; second sternite with large, distinct punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 8 mm.

Holotype. ♀, Brazil: Matto Grosso, in Zoologisches Museum der Universität, Berlin.

Paratype. ♀, Paraguay: Asuncion.

Similar in appearance to *intercisa*, but much more ferruginous, the legs entirely, and the antennae almost entirely ferruginous; also differs from *intercisa*, *scoparia* and *exclamationis* in having the thorax narrower posteriorly than anteriorly.

Timulla (*Timulla*) *lucidiventris* (Gerstaecker). (New combination.)

Mutilla lucidiventris Gerstaecker, 1874, *Arch. Naturg.* **40**: 322, male.
Mutilla phalerata Dalle Torre, 1897, *Cat. Hymen.* **8**: 73, male (in part, *lucidiventris* entry).
Mutilla lucidiventris André, 1903, *Gen. Ins.* **11**: 42, n. 35, male.

Type. ♂, no. 21058, Brazil: Salto Grande (*Sello*), in Zoologisches Museum der Universität, Berlin.

Specimens examined. ♂, ARGENTINE REPUBLIC: Iguázu Falls, 20–22.i.1920; 2 ♂♂, BRAZIL: Rio Grande do Sul (*Stieglmayr*); ♂, Brazil.

Related to *rufiventris*, *macapa*, etc. Differs in having the posterior margin of the elevated, glabrous area of clypeus evenly arcuate, the elevated surface slightly broader than high; first, second and anterior half to two-thirds of third segments ferruginous, the remainder of the abdomen black; all the abdominal tergites very sparsely clothed with erect, pale hairs and each with a posterior marginal fringe of black hairs.

I have examined Burmeister's specimens recorded by him (1875) as *phalerata* of which he made *lucidiventris* a synonym. None of the specimens is either *phalerata* (Klug) or *lucidiventris* (Gerstaecker). He was certainly incorrect in placing this species as a synonym of *phalerata* (Klug). The specimen from Iguázu Falls recorded above has been compared with the type of *lucidiventris* and found to be the same.

Timulla (Timulla) spatuliger sp. n.

Male. Head, thorax, legs and last two abdominal segments, black, the remainder of the abdomen ferruginous, except the fifth segment somewhat infuscated; head and thorax clothed with sparse, pale pubescence and also with thick, appressed, pale pubescence on the front, pronotum, anterior median margin of mesonotum, dorsum of propodeum and elevated areas of mesopleura, except remainder of mesonotum and anterior, median area of scutellum with sparse, black pubescence; abdominal tergites with very sparse, pale pubescence, except the last two tergites with sparse, black pubescence and all the tergites with a posterior marginal fringe of black hairs; mandibles strongly excised beneath; median, glabrous area of clypeus elevated posteriorly to form a broad, spatuliform process recurved forward and about as broad as high; scape bicarinate beneath and ferruginous at the tips; antennal scrobes carinate above; ocelli small, the distance between the margin of the eyes and the lateral ocelli equal to three and one-half times the greatest diameter of the latter; parapsidal furrows present and deep on posterior two-thirds of mesonotum; scutellum gibbose; enclosed area of propodeum parallel-sided, about three times as long as wide; posterior face of propodeum slightly elevated, separated from the dorsum by an irregular carina; median, impunctate area of last tergite terminating at the anterior angle of a deep, triangular depression, the latter with a median, longitudinal carina extending from its middle to the posterior margin of the tergite; sternites six and seven with small, inconspicuous, postero-lateral tubercles; last sternite with weak, lateral ridges on the anterior half; legs black, sparsely clothed with pale hairs; calcaria pale; wings fuscous with a darker outer marginal band; cell 2nd $R_1 + R_2$ squarely truncate distally; cell R_5 receiving vein M_{3+4} slightly beyond the middle; cell R_4 present but less distinct than R_5 and receiving vein M_2 slightly beyond the middle. Length, 12 mm.

Holotype. ♂, BRAZIL: Goyaz, in Muséum National d'Histoire Naturelle, Paris.

Paratypes. 2 ♂♂, BRAZIL: Jatahy, Goyaz; 7 ♂♂, Rio Verde, Goyaz; ♂, Goyaz; ♂, Mineiro, Goyaz; ♂, Chapada, Matto Grosso, ii.

Closely related to *lucidiventris* (Gerstaecker), but differs in having the elevated process of the clypeus spatuliform and in having only the last two abdominal segments black.

Timulla (Timulla) rubripes sp. n.

Male. Head, thorax and legs, except the tibiae and tarsi, black; tibiae, tarsi and abdomen entirely, ferruginous; tegulae very dark ferruginous; head and thorax clothed with

sparse, pale pubescence, except the front, pronotum, anterior median margin of mesonotum, dorsum of propodeum and elevated areas of mesopleura with thick, appressed, pale golden pubescence, and the remainder of mesonotum and anterior, median area of scutellum with sparse, black pubescence; all the tergites laterally, except the last, and all the sternites with sparse, pale pubescence; tergites three to six medially and last tergite entirely with sparse, black pubescence and all the tergites with a posterior marginal fringe of black hairs; mandibles strongly excised beneath; median, glabrous area of clypeus elevated posteriorly, the elevated margin arcuate; scape distinctly bicarinate beneath; antennal scrobes carinate above; ocelli small, the distance between the eye margins and the lateral ocelli equal to four times the greatest diameter of the latter; parapsidal furrows present and deep on the posterior two-thirds of mesonotum; scutellum gibbose; posterior face of propodeum not noticeably elevated; median, impunctate area of last tergite terminating at the anterior angle of a deep, triangular depression, the latter with a median, longitudinal carina extending from its middle to the posterior margin of the tergite; sixth and seventh tergites with small, inconspicuous, postero-lateral tubercles; last sternite with a pair of weak, lateral ridges on the anterior half; legs clothed with sparse pubescence; calcaria pale; proximal third of wings hyaline, distal two-thirds dark fuscous without a darker marginal band; cell 2nd $R_1 + R_2$ squarely truncate distally; cell R_5 receiving vein M_{3+4} at the middle; cell R_4 present and distinct and receiving vein M_2 beyond the middle. Length, 12 mm.

Holotype. ♂. Argentine Republic: Cordova (*Davis*), in Museum of Comparative Zoology, Cambridge, Mass.

Paratypes. 2 ♂♂, Argentine Republic: Cordova (*Davis*); ♂, Sierra Chica, near Alta Gracia, Cordoba, 15.i.1921 (*J. Hubrich*); ♂, La Rioja (*F. Giacomelli*); ♂, Banderas, 55 kil. au m. d'Icano, Chaco de Santiago del Estero; ♂, Bords Rio Salada env. d'Icano, Chaco de Santiago del Estero; ♂, Rio Salada, Chaco de Santiago del Estero, xii.; ♂, Prov. Salta; 4 ♂♂, Argentine Republic.

Related to *lucidiventris*, but has the abdomen entirely ferruginous, all the tarsi ferruginous, and sometimes even more of the legs ferruginous, as well as the scape and mandibles. Since all of the specimens come from the same general region of Argentine Republic, that is, the provinces of Cordoba, La Rioja, Santiago del Estero and Salta, it is unlikely that the variation in the colour of the legs has any significance. All the specimens have all of the tarsi ferruginous; the specimen from La Rioja has the remainder of the legs black; the specimens from Cordova (Davis) including the holotype, two specimens from Santiago del Estero, and the four specimens labelled " Rep. Argentine," have all the tibiae and tarsi ferruginous and the remainder of the legs black, and all have the scape somewhat ferruginous; the specimen from Sierra Chica, Cordoba, and one from Santiago del Estero have the posterior legs, except the coxae, and the tibiae and tarsi of the middle and front legs, all ferruginous, while the first has the scape entirely ferruginous as well as the mandibles medially, and the second has the distal half of the scape ferruginous together with the mandibles medially; the specimen from Salta has all the legs, except the coxae, the scape entirely and the mandibles medially, ferruginous. This may possibly be the male of *duodecimmaculata* (André).

Timulla (*Timulla*) *heterospila* (Gerstaecker). (New combination.)

Pl. 2, fig. 32, ♀.

Mutilla heterospila Gerstaecker, 1874, *Arch. Naturg.* **40** : 299, female.
Mutilla confusa Cameron, 1894, *Biol. Centr.-Amer., Hymen.* **2** : 268, pl. 13, f. 8, female (**syn. n.**).
Mutilla confusa Dalle Torre, 1897, *Cat. Hymen.* **8** : 26, female.
Mutilla heterospila Dalle Torre, 1897, *Cat. Hymen.* **8** : 47, female.

Mutilla confusa André, 1903, *Gen. Ins.* **11** : 41, n. 14, female.
Mutilla heterospila André, 1903, *Gen. Ins.* **11** : 42, n. 28, female.
Mutilla cameronella Cockerell, 1907, *Entomologist* **40** : 50, female (**syn. n.**).

Type. ♀, no. 19282, COLOMBIA : Bogota (*Lindig*), in Zoologisches Museum der Universität, Berlin. Cameron's type of *confusa* was from Volcan de Chiriqui, Panama, and is in the British Museum (Natural History).

Specimens examined. ♀, COLOMBIA : Aracataca, Magdalena, 9.vi.1927 (*G. Salt*); ♀, Sevillana, Magdalena, 31.v.1927 (*G. Salt*); ♀, Rio Frio, iii.1924 (*W. M. Mann*).

Both Gerstaecker's and Cameron's type has been examined and found to be identical. The species is easily recognised by the entirely ferruginous head, thorax and legs, the posterior marginal, pale pubescent bands of both the first and second tergites interrupted so as to form a pair of transverse spots on the first tergite and three spots on the second, the latter consisting of a small median spot and a pair of narrow, transverse lines at the posterior margin. The anterior, pale pubescent spots are widely separated from the anterior margin of the tergite. Thorax slightly broader posteriorly than anteriorly. Pygidial area glabrous, weakly rugose anteriorly.

Timulla (Timulla) mulfordi sp. n.

Pl. 2, fig. 33, ♀.

Female. Head, abdomen and legs, black, except the mandibles obscurely on the proximal half, the antennal tubercles distinctly, and the tip of the scape, ferruginous; thorax entirely ferruginous; head clothed with sparse, pale pubescence, except the front for the most part and the anterior part of the vertex with sparse, black pubescence, and the vertex almost entirely clothed with appressed, pale pubescence; thorax clothed with sparse, pale pubescence, except the dorsum with sparse, ferruginous pubescence; abdomen beneath clothed with sparse, pale pubescence, thicker at the posterior margins of the sternites; abdominal tergites for the most part black pubescent, the pale pubescent markings as follows : a complete, posterior marginal band on the first tergite; second tergite with a pair of narrow, longitudinal stripes continuous from the anterior to the posterior margins and a narrow, posterior marginal band, the anterior margin of the latter almost straight; tergites three to five each with a pair of elongate, rectangular spots, those on tergite five approximate, but distinctly separated; antennal scrobes carinate above; thorax distinctly narrower posteriorly than anteriorly; lateral margins of dorsum of thorax narrowed posterior to the pronotum, but not emarginate at the mesonotal area; scutellar scale present and distinct; mesonotal-scutellar suture obscure; lateral margins of posterior face of propodeum denticulate; sides of propodeum with moderately small punctures, sparse anteriorly, closer posteriorly; second tergite with moderate punctures indistinctly visible through the pubescence and closely interspersed with fine punctures; pygidial area irregularly rugose throughout, except the extreme tip granulate; second sternite with moderately large, distinct, well separated punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 8 mm.

Holotype. ♀, Cat. no. 52140 U.S. National Museum, BOLIVIA : Rio Beni, near the mouth of Rio Mapiri, ix. (*W. M. Mann*, Mulford Biological Expedition).

Paratypes. 2 ♀♀, PERU : Pachitea; ♀, Peru, 8.x.1903 (*W. Schnuse*).

Easily recognised by the thorax being narrowed posteriorly, the pale pubescent pattern of the abdomen, pale pubescent vertex, and the irregularly rugose, pygidial area.

Timulla (Timulla) daucia sp. n.

Pl. 2, fig. 34, ♀.

Mutilla rectangulum Mantero, 1902, *Bull. Soc. ent. Ital.* **34** : 122, female (*nec* Spinola).

Female. Head, abdomen and legs black, except mandibles proximally, antennal tubercles and tip of scape, ferruginous; thorax entirely ferruginous; head clothed with sparse, pale pubescence, except the front and vertex with sparse, black pubescence; thorax clothed with sparse, pale pubescence, except the dorsum with sparse, dark ferruginous hairs; abdomen beneath with sparse, pale pubescence, thicker at the posterior margin of the sternites; abdominal tergites clothed for the most part with black pubescence, the pale pubescent markings as follows : a complete, posterior marginal band on the first tergite; second tergite with a pair of narrow, longitudinal stripes continuous from the anterior to the posterior margins, and a complete, narrow, posterior marginal band, the anterior margin of the latter straight; tergites three to five each with a pair of elongate, rectangular spots, those on tergite five widely separated; antennal scrobes carinate above; thorax distinctly narrower posteriorly than anteriorly; lateral margins of dorsum of thorax narrowed behind the pronotal area, but the mesonotal area not emarginate; scutellar scale present and distinct; mesonotal-scutellar suture distinct; lateral margins of posterior face of propodeum denticulate; sides of propodeum with moderately small punctures, sparse anteriorly, closer posteriorly; second tergite with moderate punctures indistinctly visible through the pubescence and closely interspersed with fine punctures; pygidial area irregularly rugose almost throughout, distinctly granulate at the extreme posterior; second sternite with moderately large, distinct close punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 8 mm.

Holotype. ♀, Brazil : Corumba, Matto Grosso, ii., in Carnegie Museum, Pittsburg, Pa.

Paratypes. 2 ♀♀, Paraguay : Rio Nabilecche, vii.1897 (*Boggiani*); ♀, Puerto 14 de Mayo, i.1897 (*Boggiani*).

Closely related to *mulfordi*; differs as indicated in the key.

Timulla (Timulla) manni sp. n.

Pl. 2, fig. 35, ♀.

Female. Head, abdomen and legs black, except mandibles proximally, antennal tubercles and tip of scape, ferruginous, and the abdomen beneath dark mahogany red; thorax entirely ferruginous; head clothed with sparse, pale pubescence, except the front and vertex with sparse, black pubescence and the posterior margin of vertex also with a narrow band of sparse, appressed, pale pubescence; thorax clothed with sparse, pale pubescence, except the dorsum with sparse, ferruginous pubescence; abdomen beneath clothed with sparse, pale pubescence, thicker at the posterior margin of the sternites; abdominal tergites for the most part clothed with black pubescence, the pale pubescent markings as follows : a complete, posterior marginal band on the first tergite; second tergite with a pair of narrow, longitudinal stripes extending from the anterior to the posterior margins and a complete, narrow, posterior marginal band, the latter with one or two inconspicuous, black hairs medially but not definitely interrupted, and with the anterior margin straight; tergites three to five each with a pair of elongate, rectangular spots, those on tergite five widely separated; antennal scrobes carinate above; thorax not broader posteriorly than anteriorly; lateral margins of dorsum of thorax crenulate and distinctly emarginate at the mesonotal area; scutellar scale present and distinct; mesonotal-scutellar suture conspicuous; lateral margins of posterior face of propodeum denticulate; sides of propodeum with sparse, small

punctures; second tergite with moderate punctures visible through the pubescence and closely interspersed with fine punctures; pygidial area strongly granulate throughout; first sternite without a definite, median, longitudinal carina; second sternite with moderately large, well separated punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 8 mm.

Holotype. ♀, Cat. no. 52141 U.S. National Museum, BOLIVIA: Reyes, x. (*W. M. Mann*, Mulford Biological Expedition).

Paratypes. ♀, PARAGUAY: Chaco, x. (*Fiebrig*); ♀, Asuncion, 1890 (*Balzan*); ♀, ARGENTINE REPUBLIC: Villa Ana, F.C.S.F., xi.1924 (*K. J. Hayward*); ♀, La Paliso del Bracho, 25 kil. n.n.o. d'Icano, Laguna Mamaita, Chaco de Santiago del Estero; ♀, Bords du Rio Salado, env. d'Icano, Chaco de Santiago del Estero; ♀, Rio Salada, Chaco de Santiago del Estero; ♀, Chaco, 1886 (*Spegazzini*); ♀, Tucuman, xii.1849 (*Girard*); ♀, Tucuman; ♀, CHILE, 1898 (*Neugneen*).

Easily recognised by the granulate, pygidial area and the absence of a median, longitudinal carina on the first sternite. The posterior marginal, pale pubescent band of the second tergite is not always complete; four of the paratypes have the band narrowly interrupted medially by a few black hairs, and two of these also have the band more or less obsolete between the lateral stripes and the lateral margin of the tergite. The length varies from 8 mm. to 11 mm.

Timulla (Timulla) fiebrigi sp. n.

Pl. 2, fig. 36, ♀.

Female. Head (except mandibles proximally, antennal tubercles, scape, pedicel and first flagellar segment), abdomen (except venter), and legs, black; mandibles proximally, antennal tubercles, scape, pedicel, first flagellar segment, thorax and abdominal venter, all ferruginous; head clothed with sparse, pale pubescence, except the front with sparse, black pubescence and the vertex with a pair of subtriangular, thickly pale pubescent spots; thorax clothed with sparse, pale pubescence, except the dorsum with sparse, ferruginous pubescence; pale pubescent markings of abdomen as follows: first tergite with a narrow, posterior marginal band; second tergite with a pair of narrow, longitudinal stripes continuous from the anterior to the posterior margins, and a posterior, narrow, marginal band, the latter narrowly interrupted medially with black; tergites three to five each with a pair of elongate, rectangular spots, those on the fifth tergite widely separated; antennal scrobes carinate above; thorax not broader posteriorly than anteriorly; sides of dorsum of thorax very shallowly emarginate at the mesonotal area; scutellar scale present and distinct; mesonotal-scutellar suture obscure; lateral margins of posterior face of propodeum denticulate; sides of propodeum with small, sparse punctures; second tergite with moderate punctures visible through the pubescence and closely interspersed with fine punctures; pygidial area longitudinally striate, the striae not quite reaching the posterior margin; second sternite with moderate, distinct punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 7·5 mm.

Holotype. ♀, Cat. no. 52142 U.S. National Museum, PARAGUAY: San Bernardino, 12.xi. (*K. Fiebrig*).

Paratypes. ♀, PARAGUAY: San Bernardino (*K. Fiebrig*); ♀, Paraguay, 2.iv. (*Fiebrig*).

Distinguished by the continuous, pale pubescent stripes and the interrupted, posterior marginal band of the second tergite, the pale pubescent spots on the vertex and the striated pygidial area.

Timulla (Timulla) eris sp. n.

Pl. 2, fig. 37, ♀.

Mutilla phalerata Cresson, 1902, *Trans. Amer. ent. Soc.* **28** : 17, female (Chapada specimen) (*nec* Klug).

Female. Head, abdomen and legs, black, except the proximal half of mandibles and the antennal tubercles, ferruginous, and the tip of scape, pedicel, first flagellar segment beneath and the abdomen beneath tinged with ferruginous; thorax entirely ferruginous; front and vertex clothed with sparse, dark ferruginous pubescence, except a transverse line of pale pubescence above each antennal scrobe, and a transverse, posterior band of pale pubescence on the vertex; genae clothed with sparse, pale pubescence; thorax clothed with sparse, pale pubescence, except the dorsum with sparse, ferruginous pubescence; abdomen clothed beneath with sparse, pale pubescence, the latter thick at the posterior margins of sternites two to five; abdomen above black pubescent, the pale pubescent markings as follows : a narrow, complete band at the posterior margin of the first tergite; second tergite with a pair of moderately broad, longitudinal stripes complete from the anterior to the posterior margins and a narrow, posterior marginal band interrupted medially; tergites three to five each with a pair of linear spots, those on tergite five widely separated; antennal scrobes distinctly carinate above; thorax slightly broader posteriorly than anteriorly; lateral margins of dorsum of thorax slightly crenulate, distinctly emarginate at the mesonotal area; scutellar scale present and distinct; lateral margins of posterior face of propodeum denticulate; sides of propodeum with sparse, small punctures; second tergite with moderate, distinct punctures visible through the pubescence and closely interspersed with fine punctures; pygidial area distinctly, longitudinally striate throughout, the striae slightly diverging; second sternite with moderately large, distinct punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 8 mm.

Holotype. ♀, Brazil : Chapada, in Carnegie Museum, Pittsburg, Pa.

Paratypes. ♀, Paraguay : Chaco, x. (*Fiebrig*); ♀, Argentine Republic : Province of Corrientes.

Somewhat similar to *fiebrigi*; differs in the form of the thorax, being broader posteriorly than anteriorly, and the mesonotal area more deeply emarginate than in *fiebrigi*; the striae of the pygidial area are more numerous and divergent than in the latter species, and *fiebrigi* also has a pair of large, pale pubescent spots on the vertex instead of a transverse, pale pubescent band.

Timulla (Timulla) pictoria sp. n.

Pl. 2, fig. 38, ♀.

Female. Head, abdomen and legs black, except the mandibles proximally, antennal tubercles, tip of scape and abdomen beneath tinged with ferruginous; thorax entirely ferruginous; head clothed with sparse, pale pubescence, except the front and most of the vertex with sparse, black pubescence, the vertex also with a pair of inconspicuous spots of sparse, pale, appressed pubescence; thorax clothed with sparse, pale pubescence, except the dorsum with sparse, dark ferruginous pubescence; abdomen beneath clothed with sparse, pale pubescence, somewhat thicker at the posterior margin of the sternites; abdominal tergites mostly black pubescent, the pale pubescent markings as follows : a pair of transverse spots at the posterior margin of the first tergite; second tergite with a pair of narrow stripes extending from the anterior to the posterior margins, the stripes uniform in width, except slightly dilated posteriorly, the distance between the stripes at the posterior margin much greater than the greatest width of a dilated stripe; tergites three to five each with a pair of elongate, rectangular spots, those on tergite five widely separated; spots and stripes on the

tergites aligned to form a pair of longitudinal stripes on the abdomen above; antennal scrobes carinate above; thorax equal in width anteriorly and posteriorly; lateral margins of dorsum of thorax distinctly, slightly emarginate at the mesonotal area; scutellar scale present and distinct; mesonotal-scutellar suture distinct; lateral margins of posterior face of propodeum weakly denticulate; sides of propodeum with moderately large punctures, sparse at the anterior margin, close and confluent posteriorly; second tergite with moderately large, deep, distinct punctures visible through the pubescence and closely interspersed with fine punctures; anterior half of pygidial area irregularly rugose, the posterior half glabrous; second sternite with large, close to contiguous punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 8·5 mm.

Holotype. ♀, Brazil: Goyaz, in Muséum National d'Histoire Naturelle, Paris.

Paratypes. 7 ♀♀, Brazil: Jatahy, Goyaz; 3 ♀♀, Rio Verde, Goyaz; 10 ♀♀, Mineiro Goyaz; 14 ♀♀, Goyaz; ♀, Bonito, Prov. Pernambuco, 2.viii.1883; ♀, Chapada, Matto Grosso, xii.; ♀, Argentine Republic: Las Garzas, Bords du Rio Las Garzas, 25 kil. a l'o. d'Ocampo, Chaco de Sante Fé (*E. R. Wagner*); ♀, Bords du Rio Salada, env. d'Icano, Chaco de Santiago del Estero (*E. R. Wagner*); ♀, entre le Bracho et Amatuya, Barnados de Sancho Paso, Chaco de Santiago del Estero (*E. R. Wagner*).

Related to *intercisa*, *exclamationis* and *bilineatella*; differs as indicated in the key. The paratypes vary in length from 5·5 mm. to 8·5 mm. They also vary in the sculpture of the pygidial area; the smaller specimens have the pygidial area entirely glabrous, the larger ones have it distinctly, irregularly rugose anteriorly, and there are intergrades between; the smaller specimens also have the sides of the propodeum less coarsely punctate. There is also a variation in the amount of ferruginous tinge on the scape and the abdomen beneath, and sometimes the legs are dark ferruginous instead of black. I have studied the specimens from Bonito, Brazil, and from Argentine Republic carefully and find them the same as those from Goyaz, Brazil.

Timulla (Timulla) strigata sp. n.

Pl. 2, fig. 39, ♀.

Female. Head, abdomen and legs black, except the mandibles proximally, the antennal tubercles and the scape tinged with ferruginous; thorax entirely ferruginous; head clothed with sparse, pale pubescence, except the front and most of the vertex with sparse, black pubescence, the vertex also with a pair of conspicuous, appressed, pale pubescent spots; thorax clothed with sparse, pale pubescence, except the dorsum with sparse, ferruginous pubescence; abdomen beneath clothed with sparse, pale pubescence, thicker at the posterior margin of the sternites; abdominal tergites clothed mostly with black pubescence, the pale pubescent markings as follows: a pair of spots at the posterior margin of the first tergite; second tergite with a pair of longitudinal, narrow stripes extending from the anterior to the posterior margin and slightly expanded at the posterior margin; tergites three to five each with a pair of elongate, rectangular spots, those on tergite five widely separated; spots and stripes of tergites aligned to form two longitudinal, pale pubescent stripes; antennal scrobes carinate above; thorax equal in width anteriorly and posteriorly; lateral margins of dorsum of thorax distinctly, shallowly emarginate at the mesonotal area; scutellar scale present and distinct; mesonotal-scutellar suture distinct; lateral margins of posterior face of propodeum denticulate; sides of propodeum with sparse, small punctures throughout; second tergite with moderate, distinct punctures visible through the pubescence and closely interspersed with fine punctures; pygidial area distinctly, longitudinally rugose, the rugae united transversely at the tip of the area; second

sternite with moderately large, distinct punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 10 mm.

Holotype. ♀, Argentine Republic : Bords du Rio Salado, env. d'Icano, Santiago del Estero, i. (*E. R. Wagner*), in Muséum National d'Histoire Naturelle, Paris.

Paratypes. ♀, Argentine Republic : Bords du Rio Salado, env. d'Icano, Santiago del Estero, i. (*E. R. Wagner*); 3 ♀♀, Bords du Rio Salado, env. d'Icano, Santiago del Estero (*E. R. Wagner*); 2 ♀♀, Laguna Mameita, La Palisa del Bracho, 25 km. n.n.o. d'Icano, Santiago del Estero (*E. R. Wagner*); ♀, Mistol Paso, env. d'Icano, Santiago del Estero, ii. (*E. R. Wagner*); ♀, Tapia, Tucuman, 800 m. (*G. A. Baer*); ♀, Tucuman, 13.iii.1918; ♀, Tucuman (*C. S. Reed*).

Similar in appearance to *pictoria*, but that species has the pygidial area entirely glabrous, the sides of the propodeum closely punctate and the vertex without pubescent spots.

Timulla (Timulla) adornata sp. n.

Pl. 2, fig. 40, ♀.

Female. Head, abdomen and legs, black, except the mandibles proximally and the antennal tubercles, ferruginous, and the scape, pedicel and first flagellar segment tinged with ferruginous; thorax entirely ferruginous; head clothed with sparse, pale pubescence, except the front and vertex with sparse, fusco-ferruginous pubescence; thorax clothed with sparse, pale pubescence, except the dorsum with sparse, dark ferruginous pubescence; abdomen beneath clothed with sparse, pale pubescence, thicker at the posterior margin of the sternites; abdominal tergites clothed in part with black pubescence, the pale pubescent markings as follows : first tergite with a complete, posterior marginal band; second tergite with a pair of very broad, longitudinal stripes continuous from the anterior to the posterior margins, and a broad, posterior marginal band narrowly interrupted medially with black, the stripes about twice as wide as the posterior marginal band; tergites three to five each with a pair of large, transverse spots extending to the lateral margins of the tergites, those on tergite five well separated medially; antennal scrobes distinctly carinate above; thorax equal in width anteriorly and posteriorly; lateral margins of dorsum of thorax almost straight, scarcely emarginate at the mesonotal area; scutellar scale present and distinct; mesonotal-scutellar suture indistinct; lateral margins of posterior face of propodeum denticulate; sides of propodeum with moderate, distinct punctures, separated posteriorly, sparse at the anterior margin; second tergite with moderately large, distinct punctures visible through the pubescence and closely interspersed with fine punctures; anterior half of pygidial area weakly rugose, the posterior half glabrous; second sternite with moderately large, distinct punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 6·5 mm.

Holotype. ♀, Brazil, in Muséum National d'Histoire Naturelle, Paris.

Probably related to *scoparia* and *intercisa*. Easily recognised by the very broad stripes and narrowly interrupted, posterior marginal band of the second tergite, the large, transverse spots on tergites three to five, the absence of pubescent spots on the vertex and the sculpture of the pygidial area.

Timulla (Timulla) candace sp. n.

Pl. 3, fig. 41, ♀.

Female. Head black, except proximal two-thirds of mandibles, clypeus, antennal scrobes, antennal tubercles, scape, pedicel, first segment of flagellum and head beneath

anteriorly, all pale ferruginous; thorax entirely ferruginous; abdomen ferruginous, except the tergites medially and the last two segments, black; legs ferruginous, except the anterior femora and tibiae, and the tips of the remaining femora black; head clothed with sparse, pale pubescence, except the front and vertex clothed with sparse, black pubescence; thorax clothed with sparse, pale pubescence, except the dorsum clothed with sparse, ferruginous pubescence; abdomen beneath clothed with sparse, pale pubescence, not much thicker at the posterior margin of the sternites; abdominal tergites largely black pubescent, the pale pubescent markings as follows: a thin, inconspicuous, posterior marginal band broadly interrupted medially on the first tergite; second tergite with a pair of linear spots extending from the anterior margin to distinctly beyond the transverse midline, and a complete, posterior marginal band, the anterior margin of the latter dilated each side behind the anterior spots and slightly at the middle; tergites three to five each with a pair of elongate, rectangular spots, those on tergite five widely separated; antennal scrobes carinate above; thorax equal in width anteriorly and posteriorly; lateral margins of dorsum of thorax slightly but distinctly emarginate at the mesonotal area; scutellar scale present and distinct; mesonotal-scutellar suture distinct; lateral margins of posterior face of propodeum denticulate; sides of propodeum with moderate, distinct punctures throughout, close at the posterior margin; second tergite with moderate, distinct punctures visible through the pubescence and closely interspersed with fine punctures; anterior margin of pygidial area feebly rugose, the most of the pygidial area glabrous, unsculptured; second sternite with moderately large, distinct punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 7 mm.

Holotype. ♀, Brazil: Santarem, v.1919 (*S. M. Klages*), in Carnegie Museum, Pittsburg, Pa.

Paratypes. ♀, Brazil: Prainha, Para, 10.v.1903 (*Ducke*); ♀, Amazonas; ♀, Brazil.

Similar in appearance to specimens of *scoparia* in which the stripes are interrupted and the posterior band of the second tergite is complete. Differs in having the extensive ferruginous area on the anterior part of the head, ferruginous legs, absence of pale pubescent spots on the vertex and the pygidial area almost entirely glabrous. One paratype (Brazil) has the clypeus and antennal scrobes black.

Timulla (Timulla) brancoensis sp. n.

Pl. 3, fig. 42, ♀.

Female. Head, abdomen and legs, black, except mandibles proximally, antennal tubercles and scape dark ferruginous; thorax ferruginous, except mesopleura, anterior half of sides of propodeum, and a large, median, posterior spot on the posterior face of propodeum, all black; head with sparse, pale pubescence, except the front and vertex for the most part with sparse, blackish pubescence; thorax with sparse, pale pubescence except the dorsum with sparse, ferruginous pubescence; abdomen beneath with sparse, pale pubescence; abdominal tergites for the most part with sparse, black pubescence, the pale pubescent markings as follows: first tergite with a complete, posterior marginal band; second tergite with a pair of narrow, linear spots extending from the anterior margin to the transverse midline, and a broad, complete, posterior marginal band, the anterior margin of the latter slightly sinuate but not distinctly, angulately dilated medially, tergites three to five each with a pair of linear spots, those on tergite five widely separated; antennal scrobes carinate above; thorax slightly, but distinctly broader posteriorly than anteriorly; lateral margins of dorsum of thorax shallowly, but distinctly emarginate at the mesonotal area; scutellar scale present and distinct; mesonotal-scutellar suture distinct; lateral

margins of posterior face of propodeum denticulate; sides of propodeum with moderate, distinct, separated punctures anteriorly, the punctures becoming very close and larger posteriorly; second abdominal tergite slightly depressed longitudinally at the middle, with moderately large, distinct punctures visible through the pubescence and closely interspersed with fine punctures; pygidium longitudinally rugose on the anterior two-thirds, glabrous on the posterior third; second sternite with moderately large, distinct punctures throughout; legs clothed with sparse, pale pubescence; calcaria pale. Length, 8 mm.

Holotype. ♀, Brazil: Rio Branco, Amazonas, xii.1903 (*P. Kibler*), in Zoologisches Museum der Universität, Berlin.

Characterised by the entirely black mesopleura, metapleura and anterior half of sides of propodeum, the black spot on the posterior face of propodeum, mesonotal-scutellar suture distinct, the second tergite depressed slightly and broadly along the mid-longitudinal line, and the pubescent pattern of the second tergite.

Timulla (Timulla) lineoloides sp. n.

Pl. 3, fig. 43, ♀.

Mutilla lineola Burmeister, 1854, *Abh. naturf. Ges. Halle, SitzBer.* **2** : 27, female (*nec* male) (*nec* Fabricius).
Mutilla lineola Gerstaecker, 1874, *Arch. Naturg.* **40** : 300, female (in part) (*nec* Fabricius).
Mutilla lineola Burmeister, 1875, *Bol. Acad. nac. Cordova* **1** : 498, female (female in part, Novo Friburgo specimens) (*nec* male) (*nec* Fabricius).
Mutilla lineola Cresson, 1902, *Trans. Amer. ent. Soc.* **28** : 17, 18, female (*nec* Fabricius).

Female. Head, abdomen and legs, black, except the mandibles proximally, the antennal tubercles, and the tip of the scape, ferruginous; thorax entirely ferruginous; head clothed with sparse, pale pubescence, except the front and most of the vertex with sparse, black pubescence, the posterior margin of the vertex with sparse, appressed pubescence; thorax clothed with sparse, pale pubescence, except the dorsum with sparse, ferruginous pubescence; abdomen beneath with sparse, pale pubescence, thicker at the posterior margin of the sternites; abdominal tergites clothed in part with black pubescence, the pale pubescent markings as follows: first tergite with a complete, posterior marginal band; second tergite with a pair of anterior, rather broad, sublinear spots extending from the anterior margin to the transverse midline, and a broad, complete, posterior marginal band, the anterior margin of the latter practically straight; tergites three to five each with a pair of quadrate spots as broad as long, those on tergite five well separated; antennal scrobes carinate above; thorax equal in width posteriorly and anteriorly; lateral margins of dorsum of thorax almost straight, only very shallowly emarginate at the mesonotal area; scutellar scale present and distinct; mesonotal-scutellar suture indistinct; lateral margins of posterior face of propodeum denticulate; sides of propodeum with moderately small, distinct, well separated punctures throughout; second tergite with moderately large, conspicuous punctures visible through the pubescence and closely interspersed with fine punctures; anterior half of pygidial area irregularly rugose, the posterior half very weakly granulate, almost glabrous; second sternite with large, distinct punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 8 mm.

Holotype. ♀, Brazil: Petropolis, Rio de Janeiro, ii.1857 (*H. Clark*), in British Museum (Natural History).

Paratypes. ♀, Brazil: Corcovado, Rio de Janeiro, 13.v.1912 (*G. E. Bryant*); 2 ♀♀, Novo Friburgo, Rio de Janeiro; ♀, Rio de Janeiro; ♀, Santa Thereza, Espirito Santo, xi.1928 (*O. Conde*); 5 ♀♀, Vol du Rio Pardo, São Paulo; ♀, Ribeirao Pires, São Paulo; ♀, Cantareira, São Paulo, i.1914 (*E. Garbe*); ♀, Mato d. Governo, São Paulo, 15.x.1926 (*Ohaus*); ♀, Mato d. Governo, São Paulo,

26.x.1930 (*Melser*); ♀, Joinville, Santa Catharina (*Schmalz*); 2 ♀♀, Novo Friburgo; 2 ♀♀, Brazil (*Perty*); ♀, Brazil (*Germar*); 2 ♀♀, Brazil.

Easily recognised by the broad, pale pubescent spots on tergites three to five, the irregularly rugose, anterior half of pygidial area, and the distinct, separated punctures on the sides of propodeum. Burmeister's, Gerstaecker's and Cresson's specimens of *lineola* have been studied and found to be the same as this species. Cresson mentions a specimen of *lineola* in making comparisons with other species.

Timulla (Timulla) herse sp. n.

Pl. 3, fig. 44, ♀.

Female. Head, abdomen and legs, black, except the mandibles proximally, antennal tubercles and scape, ferruginous; thorax entirely ferruginous; head clothed with sparse, pale pubescence, except the front and most of the vertex with sparse, black pubescence, the posterior margin of the vertex with sparse, appressed, pale pubescence; thorax clothed with sparse, pale pubescence, except the dorsum with sparse, ferruginous pubescence; abdomen beneath clothed with sparse, pale pubescence, thicker at the posterior margin of the sternites; abdominal tergites in part black pubescent, the pale pubescent markings as follows: a complete, posterior marginal band on the first tergite; second tergite with a pair of anterior, sublinear spots extending from the anterior margin to the transverse midline, and a broad, complete posterior marginal band, the anterior margin of the latter almost straight, only slightly sinuate; tergites three to five each with a pair of elongate, rectangular spots, those on tergite five widely separated; antennal scrobes carinate above; thorax equal in width posteriorly and anteriorly; lateral margins of dorsum of propodeum practically straight, scarcely emarginate at all at the mesonotal area; scutellar scale present and distinct; mesonotal-scutellar suture distinct; lateral margins of posterior face of propodeum denticulate; sides of propodeum with moderate, close, distinct punctures, except the extreme anterior margin impunctate; second tergite with moderately large, conspicuous punctures visible through the pubescence and closely interspersed with fine punctures; anterior half of pygidial area longitudinally rugose, the posterior half very weakly granulate, almost glabrous; second sternite with moderately large, distinct punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 6 mm.

Holotype. ♀, Cat. no. 52143 U.S. National Museum, British Guiana: Essequibo River, vii.1921 (*A. Busck*).

Paratypes. ♀, Surinam: Kwakoegron, Saramacca river, 11.vi.1927; ♀, French Guiana: La Mona; ♀, Amérique meridionale; ♀, British Guiana: Kartabo Point, 16.vi.1936 (*N. A. Weber*).

Similar in appearance to *zonata*, *lineoloides*, *direpta* and others, but distinguished from those as indicated in the key. The paratypes vary in length from 6 mm. to 9 mm.

Timulla (*Timulla*) *zonata* (Spinola).

Pl. 3, fig. 45, ♀.

Mutilla zonata Spinola, 1841, *Ann. Soc. ent. Fr.* **10**: 89, female.
Mutilla lineola Gerstaecker, 1874, *Arch. Naturg.* **40**: 300, female (in part) (*nec* Fabricius).
Mutilla mediata Dalle Torre, 1897, *Cat. Hymen.* **8**: 59, female (in part, *zonata* citation) (*nec* male) (*nec* Fabricius).
Timulla (*Timulla*) *zonata* Mickel, 1937, *Rev. Ent. Rio* **7**: 167, female.

Lectotype. ♀, Cayenne, in Spinola collection, Museo Zoologia et Anatomia comparata della R. Universitá, Torino, Italy.

Specimens examined. ♀, French Guiana: Pariacabo, Rivière de Kourou; ♀, La Mana.

The type of this species has been examined and found to be specifically distinct from *lineola* (Fabricius) (= *mediata* (Fabricius)) with which it was united by Gerstaecker. The description given by Spinola is accurate. At the time the type was studied no specimens were at hand for comparison and the relative widths of the anterior and posterior regions of the thorax were not carefully measured. The two specimens listed above agree exactly with Spinola's description and come from the same general locality. They both have the thorax slightly narrower posteriorly than anteriorly. I feel sure they are conspecific with Spinola's type. The latter has the pygidial area almost entirely, irregular rugose and the sides of the propodeum with scattered, small punctures. Spinola mentions two females in his original description, but only one specimen is in the collection at Torino. It has been designated as a lectotype. The two specimens mentioned above are in the Muséum National d'Histoire Naturelle, Paris.

Timulla (Timulla) sieberi sp. n.

Pl. 3, fig. 46, ♀.

Mutilla linecola Klug, 1821, *N. Acta Acad. Nat. Curios.* **10** : 307, pl. 22, fig. 1, female (*nec* Fabricius).

Female. Head, abdomen and legs, black, except the antennal tubercles, scape, integument of second tergite beneath the posterior marginal, pale pubescent band, and the second abdominal sternite, ferruginous; thorax ferruginous, except the meso- and metapleura and posterior margin of posterior face of propodeum, black; head clothed with sparse, pale pubescence, except the front and most of the vertex with sparse, fuscous to black pubescence, the posterior margin of vertex with inconspicuous, appressed, pale pubescence; thorax with sparse, pale pubescence, except the dorsum with sparse, ferruginous pubescence; abdominal sternites clothed with sparse, pale pubescence, the latter thick at the posterior margin of the sternites; abdominal tergites clothed for the most part with black pubescence, except the second tergite with the lateral fourths sparsely pale pubescent, the pale pubescent markings of the tergites as follows: a broad, posterior marginal band on the first tergite; second tergite with a pair of anterior, cuneiform spots, broader anteriorly than posteriorly and extending from the anterior margin to the transverse midline; a broad, posterior marginal band with its anterior margin sinuate also on the second tergite; tergites three to five each with a pair of elongate, rectangular spots, those on tergite five widely separated; antennal scrobes carinate above; thorax not broader posteriorly than anteriorly; lateral margins of dorsum of propodeum distinctly, but shallowly emarginate at the mesonotal area; scutellar scale present, very broad and prominent; mesonotal-scutellar suture distinct; lateral margins of posterior face of propodeum denticulate; sides of propodeum very sparsely punctate anteriorly and with close, moderate punctures posteriorly; second tergite broadly, shallowly depressed medially and longitudinally, and also with moderate, distinct punctures visible through the pubescence, these closely interspersed with fine punctures; pygidial area irregularly rugose throughout, except the extreme posterior tip granulate; median, longitudinal carina of first sternite elevated posteriorly to form a small tooth; second sternite with moderately large, distinct punctures; legs clothed with sparse, pale hairs; calcaria pale. Length, 12 mm.

Holotype. ♀, Brazil: Para (*Sieber*), no. 6627 in Zoologisches Museum der Universität, Berlin.

Paratype. ♀, Brazil: Rio Arrayodos, 27.iv.1903 (*Ducke*).

Characterised by the cuneiform, anterior, pubescent markings on the second

abdominal tergite, the black maculations of the thorax, the latter not broader posteriorly than anteriorly and the irregularly rugose, pygidial area. The paratype has only the ventral two-thirds of the pleural areas black instead of entirely black as in the holotype. The holotype is the specimen recorded by Klug as *lineola* (Fabricius) (= *mediata* (Fabricius)) from which it differs markedly in the pubescent markings of the second tergite; these markings are much broader and heavier in *sieberi* and the second tergite is more coarsely punctate.

Timulla (Timulla) saundersi sp. n.

Female. Head, abdomen and legs, black, except mandibles tinged with ferruginous medially, and antennal tubercles, distal half of scape, and integument beneath the posterior marginal, pale pubescent band of second tergite, ferruginous; thorax entirely ferruginous; head clothed with sparse, pale pubescence, except the front and most of the vertex with sparse, black pubescence, and the posterior margin of vertex with sparse, appressed, pale pubescence; thorax clothed with sparse, pale pubescence, except the dorsum with sparse, ferruginous pubescence; abdominal segments beneath clothed with sparse, pale pubescence, much thicker at the posterior margins of the sternites; abdominal tergites in part black pubescent, the pale pubescent markings as follows: a complete, posterior marginal band on the first tergite; second tergite with a pair of sublinear, narrowly cuneiform spots extending from the anterior margin to the transverse midline, and a broad, posterior marginal band, the anterior margin of the latter slightly sinuate; tergites three to five each with a pair of elongate, rectangular spots, those on tergite five widely separated, and each tergite also margined laterally with pale pubescence; antennal scrobes carinate above; thorax equal in width posteriorly and anteriorly; lateral margins of dorsum of thorax only slightly emarginate at the mesonotal area; scutellar scale broad and distinct; mesonotal-scutellar suture distinct; lateral margins of posterior face of propodeum denticulate; sides of propodeum with scattered, moderate punctures anteriorly, the punctures close posteriorly; second tergite slightly depressed medially and posteriorly, with moderately large, distinct punctures visible through the pubescence and closely interspersed with fine punctures; pygidial area irregularly rugose except the extreme tip distinctly granulate; median, longitudinal carina of first sternite elevated posteriorly forming a blunt tooth; second sternite with large, distinct punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 10 mm.

Holotype. ♀, Brazil: Amazonas, in Saunders collection, Hope Dept., Oxford University.

Paratype. ♀, Brazil: Santarem.

Related to *sieberi*, but has the thorax entirely ferruginous. The pale pubescent pattern of the abdominal tergites is practically identical with that of *sieberi*. Both have the second tergite depressed medially, and the integument ferruginous beneath the posterior marginal, pale pubescent band.

Timulla (Timulla) boliviana sp. n.

Pl. 3, fig. 47, ♀.

Female. Head, abdomen and legs, black, except the antennal tubercles ferruginous and the scape tinged with ferruginous; thorax ferruginous, except the ventral two-thirds of the meso- and metapleura, black; head clothed with sparse, pale pubescence, except the front and vertex mostly with sparse, blackish pubescence and the vertex posteriorly with inconspicuous, thicker, pale, appressed pubescence; thorax clothed with sparse, pale pubescence, except the dorsum with sparse, dark ferruginous pubescence; abdomen

beneath with sparse, pale pubescence, the latter thick at the posterior margin of the sternites; abdominal tergites clothed for the most part with black pubescence, the pale pubescent markings as follows : a complete, posterior marginal band on the first tergite; second tergite with a pair of anterior, linear spots extending from the anterior margin to the transverse midline, and a broad, posterior marginal band with its anterior margin dilated posterior to each anterior spot and also distinctly, angulately dilated medially; tergites three to five each with a pair of elongate, rectangular spots, those on tergite five well separated; antennal scrobes carinate above; thorax not broader posteriorly than anteriorly; lateral margins of dorsum of thorax almost straight, scarcely emarginate at the mesonotal area; scutellar scale broad and distinct; mesonotal-scutellar suture distinct; lateral margins of posterior face of propodeum weakly denticulate; sides of propodeum almost impunctate anteriorly and with close, moderate punctures posteriorly; second tergite with moderate, distinct punctures visible through the pubescence and closely interspersed with fine punctures; pygidial area longitudinally rugose on the anterior two-thirds, granulate on the posterior third; second sternite with moderately large, separated punctures; legs clothed with sparse, pale hairs; calcaria pale. Length, 8·5 mm.

Holotype. ♀, Bolivia : Coroico, Yungas, in Muséum National d'Histoire Naturelle, Paris.

Distinguished by the black markings on the pleural areas, the thorax not broader posteriorly than anteriorly, sculpture of the pygidial area, and the pubescent pattern of the second tergite.

Timulla (Timulla) inca sp. n.

Pl. 3, fig. 48, ♀.

Female. Head, abdomen and legs, black, except mandibles proximally, antennal tubercles and tip of scape, ferruginous; thorax entirely ferruginous; head clothed with sparse, pale pubescence, except the front and vertex clothed with sparse, black pubescence; thorax clothed with sparse, pale pubescence, except the dorsum with sparse, ferruginous pubescence; abdomen beneath with sparse, pale pubescence, thicker at the posterior margin of the sternites; abdominal tergites in part black pubescent, the pale pubescent markings as follows : a complete, posterior marginal band on the first tergite; second tergite with a pair of anterior, narrow, linear spots extending from the anterior margin to well beyond the transverse midline, and a somewhat narrow, complete, posterior marginal band, the anterior margin of the latter slightly, but distinctly sinuate; tergites three to five each with a pair of elongate, rectangular spots, those on tergite five widely separated; antennal scrobes carinate above; thorax equal in width posteriorly and anteriorly; lateral margins of dorsum of thorax distinctly, but not deeply, emarginate at the mesonotal area; scutellar scale present and distinct; mesonotal-scutellar suture distinct; lateral margins of posterior face of propodeum denticulate; sides of propodeum with moderate, distinct punctures, except the extreme posterior margin confluently punctate; second tergite with moderate, distinct punctures visible through the pubescence and closely interspersed with fine punctures; pygidial area longitudinally rugose on the anterior two-thirds, the posterior third distinctly granulate; second sternite with moderately large, distinct punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 7·5 mm.

Holotype. ♀, Peru : Callao, in Zoologisches Museum der Universität, Berlin.

Paratypes. ♀, Peru : Cuzco; ♀, Lima (*Galatea*); 3 ♀♀, Peru; ♀, Ecuador : Guayaquil, vi.1901 (*Buchwald*).

The narrow, linear stripes of the second tergite extending beyond the trans-

verse midline and the longitudinally rugose, pygidial area distinguish this species. The paratypes vary in length from 6 mm. to 9 mm.

Timulla (Timulla) diversita sp. n.

Pl. 3, fig. 49, ♀.

Female. Head including the antennal tubercles, abdomen and legs, black, except the mandibles proximally and the scape at the tip slightly tinged with ferruginous; thorax entirely ferruginous; head clothed with sparse, pale pubescence, except the front and vertex entirely with sparse, black pubescence; thorax clothed with sparse, pale pubescence, except the dorsum with sparse, ferruginous pubescence; abdomen beneath clothed with sparse, pale pubescence, much thicker at the posterior margin of the sternites; abdominal tergites clothed in part with black pubescence, the pale pubescent markings as follows: a complete, posterior marginal band on the first tergite; second tergite with a pair of broad, linear, anterior spots extending from the anterior margin to the transverse midline and a very broad, complete, posterior marginal band, the anterior margin of the latter distinctly sinuate, angularly dilated medially; tergites three to five each with a pair of quadrate spots as broad as long, those on tergite five confluent medially on the posterior margin; antennal scrobes carinate above; thorax distinctly broader posteriorly than anteriorly; lateral margins of dorsum of thorax slightly, but distinctly emarginate at the mesonotal area; scutellar scale present, broad and distinct; mesonotal-scutellar suture distinct; lateral margins of posterior face of propodeum strongly denticulate; anterior half of sides of propodeum with moderate, shallow, sparse punctures, the posterior half coarsely, confluently punctate; second tergite with moderate, distinct punctures visible through the pubescence and closely interspersed with fine punctures; anterior two-thirds of pygidial area longitudinally rugose, the posterior third weakly, irregularly rugose; second sternite with moderately large, distinct punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 11 mm.

Holotype. ♀, Colombia, Mus. Drewsen, in Zoologisk Museum, Copenhagen.

Related to *boliviana*, but the pale markings on tergites three to five are quadrate, the sides of propodeum are more extensively, coarsely punctate posteriorly and the pygidial area is irregularly rugose posteriorly.

Timulla (*Timulla*) *connexa* (Cameron). (New combination.)

Pl. 8, fig. 122, ♂.

Mutilla exacta Cameron, 1894, *Biol. Centr.-Amer., Hymen.* **2**: 278, male (*nec* Smith, 1879) (**syn. n.**).
Mutilla connexa Cameron, 1894, *Biol. Centr.-Amer., Hymen.* **2**: 279, male.
Mutilla connexa Dalle Torre, 1897, *Cat. Hymen.* **8**: 26, male.
Mutilla friesei Dalle Torre, 1897, *Cat. Hymen.* **8**: 41, male (**syn. n.**).
Mutilla connexa André, 1903, *Gen. Ins.* **11**: 41, n. 15, male.
Mutilla exacta André, 1903, *Gen. Ins.* **11**: 42, n. 21, male.

Type. ♂, Panama: Bugaba, 800–1500 ft. (*Champion*), in British Museum (Natural History). The type of *exacta* (Cameron) is also in the British Museum (Natural History).

Specimens examined. ♂, Panama: Changuinola Dist., Bocas del Toro (*F. R. Swift*); ♂, Costa Rica: Limon, Surecta province, 19.v.1924 (*J. C. Bradley*).

Related to the three following species, from which it can be distinguished by the characters given in the key. *Mutilla exacta* Cameron (1894) is preoccupied by *Mutilla exacta* Smith (1879), so *connexa* as the next available name is valid. The types of *exacta* and *connexa* have been compared and found to be

identical, as well as from the same locality. There is no basis for the differences mentioned by Cameron in his description of *connexa*. In the original description of *exacta*, Cameron states that this species is easily known from *amulae* " by the four teeth on the cheeks." After a careful examination of the type of *exacta* I am unable to determine what Cameron had in mind, since the cheeks or genae are not at all toothed or modified in any way. Incidentally *amulae* is not at all similar to this species, except in colour.

Timulla (Timulla) tumidula sp. n.

Male. Head, thorax, first and last abdominal segments, and legs, black; remainder of abdomen ferruginous and all the tergites clothed with fulvous pubescence; head, thorax and legs clothed with sparse, pale pubescence, except the mesonotum and anterior, median area of scutellum clothed with sparse, black pubescence, the front, vertex posteriorly, genae, pronotum posteriorly, dorsum of propodeum slightly, and elevated areas of mesopleura also with somewhat thicker, appressed, pale pubescence; mandibles strongly excised beneath; median, glabrous area of clypeus elevated posteriorly, the posterior, elevated margin evenly arcuate, the posterior, elevated face about two-thirds as high as broad; scape distinctly bicarinate beneath, subterete throughout; first and second segments of flagellum equal in length; antennal scrobes strongly carinate above; ocelli small, the distance between the eye margins and the lateral ocelli equal to almost three times the greatest diameter of the latter; parapsidal furrows present and deep on posterior two-thirds of mesonotum; scutellum weakly gibbose; enclosed area of propodeum elevated posteriorly into a tubercle; posterior face of propodeum not elevated and separated from the dorsum; tegulae glabrous, impunctate, except the anterior and inner margins punctate and pale pubescent; broad, posterior margin of first abdominal tergite ferruginous; median, impunctate area of last tergite terminating in the long arms of a Y-shaped carina, the stem of the Y very short, almost obsolete; sixth sternite without postero-lateral tubercles, those on the seventh sternite weak and obscure; last sternite with a pair of small, antero-lateral tubercles and with a prominent, median, tumid elevation posteriorly; posterior, inner angle of middle coxae not toothed nor tuberculate; calcaria pale; wings fuscous throughout; cell 2nd $R_1 + R_2$ truncate distally; cell R_5 receiving vein M_{3+4} slightly beyond the middle; cell R_4 present but less distinct than R_5 and receiving vein M_2 well beyond the middle. Length, 15 mm.

Holotype. ♂, Cat. no. 52144 U.S. National Museum, Costa Rica: San Carlos (*Schild and Burgdorf*).

Paratypes. ♂, Costa Rica: San Carlos (*Schild and Burgdorf*); 5 ♂♂, San Carlos, 1902; ♂, Costa Rica.

Closely related to *connexa* (Cameron). Differs in having the last abdominal segment black.

Timulla (Timulla) labdace sp. n.

Male. Head, thorax, first abdominal segment and legs, black; remainder of abdomen ferruginous, all the tergites clothed with fulvous pubescence; head, thorax and legs clothed with sparse, pale pubescence, except the mesonotum and the anterior, median area of scutellum with sparse, black pubescence, the front, vertex posteriorly, genae, pronotum posteriorly, dorsum of propodeum slightly, and elevated areas of mesopleura also with somewhat thick, appressed, pale pubescence; mandibles strongly excised beneath; clypeus elevated posteriorly, the posterior, elevated margin arcuate, the posterior, elevated face about twice as broad as high; distal half of scape bicarinate beneath, the scape subterete throughout; first and second flagellar segments equal in length; antennal scrobes carinate above; ocelli small, the distance between the eye margins and the lateral ocelli

almost equal to three times the greatest diameter of the latter; parapsidal furrows present and distinct on the posterior two-thirds of mesonotum; scutellum weakly gibbose; enclosed area of propodeum elevated posteriorly to form a tubercle; posterior face of propodeum not elevated and separated from the dorsum; tegulae glabrous, impunctate, except the posterior and inner margins, and the posterior, inner quadrant punctate and pale pubescent; broad, posterior margin of first abdominal tergite ferruginous; median, impunctate area of last tergite terminating in the arms of a Y-shaped carina, the arms of the Y very long and the stem very short, not more than one-third the length of an arm; sixth and seventh sternites each with prominent, postero-lateral tubercles; last sternite with a pair of very prominent, antero-lateral tubercles and with a conspicuous, posterior, median, tumid elevation; posterior, inner angle of middle coxae not dentate nor denticulate; calcaria pale; wings subfuscous, the outer margin with a darker band; cell 2nd $R_1 + R_2$ subtruncate distally; cell R_5 receiving vein M_{3+4} slightly before the middle; cell R_4 present but less distinct than R_5 and receiving vein M_2 well beyond the middle. Length, 17 mm.

Holotype. ♂, Cat. no. 52145 U.S. National Museum, CANAL ZONE: Barro Colorado Island, 10–12.v.1926 (*C. T. Greene*).

Paratypes. ♂, CANAL ZONE: Barro Colorado Island, 20.vii.1924 (*N. Banks*); 2 ♂♂, COLOMBIA: Muzo, Dept. Boyaca, 900 m. (*J. Bequaert*).

Related to *connexa* (Cameron); differs in having much stronger tubercles on sternites six and seven and a distinctly more transverse clypeus.

Timulla (Timulla) adrastis sp. n.

Pl. 8, fig. 123, ♂.

Male. Head, thorax and legs, black, clothed with sparse, pale pubescence, except the mesonotum and median, anterior area of scutellum clothed with sparse, black pubescence, the front, vertex posteriorly, genae, pronotum posteriorly, dorsum of propodeum and elevated areas of mesopleura also with somewhat thick, appressed, pale pubescence; abdomen entirely ferruginous, all the tergites clothed with fulvous pubescence; mandibles weakly excised beneath, the emargination shallow and the tooth thus formed inconspicuous; distal half of mandibles heavy, thick; median, glabrous area of clypeus elevated posteriorly, the posterior, elevated margin arcuate, the posterior, elevated face transverse, distinctly broader than high; distal half of scape tinged with ferruginous, strongly dilated and flattened, with only a single, distinct, sharp carina; first and second flagellar segments equal in length; antennal scrobes weakly carinate above; ocelli small, the distance between the eye margins and the lateral ocelli almost equal to three times the greatest diameter of the latter; parapsidal furrows present and deep on posterior three-fourths of mesonotum; scutellum weakly gibbose; enclosed area of dorsum of propodeum elevated posteriorly into a small tubercle; posterior face of propodeum not elevated and separated from the dorsum; tegulae glabrous, impunctate, except the anterior and inner margins, and the posterior, inner quadrant punctate and pale pubescent; median, impunctate area of last tergite terminating in the long arms of a Y-shaped carina, the stem of the Y very short, not more than one-third the length of an arm; sixth sternite without postero-lateral tubercles, the seventh sternite with the tubercles distinct; last sternite with a pair of antero-lateral, dentiform tubercles and without a posterior, median, tumid elevation; posterior, inner angle of middle coxae not toothed nor tuberculate; calcaria pale; wings fuscous throughout, with a slightly darker band at the outer margin; cell 2nd $R_1 + R$ subtruncate distally; cell R_5 receiving vein M_{3+4} slightly beyond the middle; cell R_4 present but less distinct than R_5 and receiving vein M_2 well beyond the middle. Length, 15 mm.

Holotype. ♂, Cat. no. 52146 U.S. National Museum, Mexico: Tuxpan, 28.xi.1921 (*A. W. Morrill*), collected on cotton, Hunter no. 9131.

Paratypes. ♂, Mexico: Compostela, Nayarit, 20.vii.1933; ♂, Vulkan, Colima, 1918 (*J. Laue*); 5 ♂♂, Mexico (*C. F. Baker*, no. 2154); 6 ♂♂, Mexico (*Baker*, no. 1785).

Related to *connexa*; differs in having a strongly dilated and flattened scape, weakly excised mandibles, no tumid elevation on the last sternite and entirely ferruginous abdomen.

Timulla (*Timulla*) *ordinaria* (Smith). (New combination.)

Pl. 9, fig. 132, ♂.

Mutilla ordinaria Smith, 1879, *Descr. N. Spec. Hymen.* : 225, male.
Mutilla ordinaria Blake, 1886, *Trans. Amer. ent. Soc.* **13** : 204, male.
Mutilla ordinaria Cameron, 1894, *Biol. Centr.-Amer., Hymen.* **2** : 289, male.
Mutilla ordinaria Dalle Torre, 1897, *Cat. Hymen.* **8** : 69, male.
Mutilla ordinaria André, 1903, *Gen. Ins.* **11** : 73, n. 77, male.

Type. ♂, Orizaba, Mexico, in British Museum (Natural History).

Specimens examined. 2 ♂♂, Mexico: Orizaba; ♂, Chichen-Itza, Yucatan, vi.1929; 4 ♂♂, Mexico; ♂, Guatemala: Capetillo (*G. C. Champion*); ♂, Costa Rica: Farm La Caja, 8 km. west San Jose, ix.1925.

The type of this species has been examined and the following additional descriptive notes drawn from it:

Mandibles deeply excised and toothed beneath; anterior margin of clypeus broadly, somewhat angulately emarginate medially, the lateral angles thus formed slightly elevated, thus the anterior margin of the clypeus bidentate; scutellum evenly convex but with a median, longitudinal, glabrous line on the anterior half; enclosed area of propodeum not elevated posteriorly to form a tubercle; median, impunctate area of last tergite extending to the distal margin of the tergite without interruption by an elevation of any kind; sternites six and seven without postero-lateral tubercles; last sternite with a pair of low, obscure, lateral ridges on the anterior half, the ridges almost contiguous postero-medially; intermediate coxae not toothed at the postero-inner angles.

The bidentate clypeus, structure of terminal tergite, and the black, first abdominal segment will serve to identify this species.

Timulla (Timulla) bradleyi sp. n.

Male. Head, thorax and legs, black, the abdomen entirely ferruginous; mandibles deeply excised beneath; anterior margin of median area of clypeus broadly, angulately emarginate, but the lateral angles thus formed rounded, not elevated into small teeth, therefore the clypeus not bidentate; mesonotum with moderately large, distinct, well separated punctures; scutellum evenly convex, densely punctate throughout; enclosed area of propodeum elongate, about three times as long as wide, the sides very slightly sinuate; median, impunctate area of last tergite extending to the posterior margin of the tergite, not interrupted by an elevation of any kind; sternites six and seven without postero-lateral tubercles; lateral ridges of hypopygium very obscure, the tips slightly elevated and almost contiguous medially, thus forming a low, median, transverse ridge; intermediate coxae not toothed at the postero-lateral angles; head and thorax clothed with sparse, pale pubescence; and also with thicker, appressed, pale pubescence on the front, genae, posterior margin of pronotum, dorsum of propodeum and mesopleura, except the mesonotum with sparse, black pubescence; abdomen clothed with sparse, fulvous pubescence throughout; wings subfuscous; calcaria pale. Length, 13 mm.

Holotype ♂, Costa Rica: Suretka, Limon province, 31.v.1924 (*J. C. Bradley*), in Cornell University collection, Ithaca, N.Y.

Related to *ordinaria* (Smith), the terminal tergite being the same in both, and the anterior margin of the clypeus emarginate in both, but in *ordinaria* the lateral angles of the emargination elevated into teeth, and in *bradleyi* the angles rounded and not elevated; differs also from *ordinaria* in the sparsely punctate mesonotum, absence of a glabrous line on the scutellum, the somewhat paler wings and the entirely ferruginous abdomen.

Timulla (Timulla) simplex sp. n.

Male. Head, thorax, first abdominal segment and legs, black, the remainder of the abdomen entirely ferruginous; head clothed throughout with sparse, erect, pale pubescence and in addition with sparse, appressed, pale pubescence on the lateral areas of clypeus, front, genae and posterior portion of vertex; thorax clothed with sparse, erect, pale pubescence, the pronotum, mesopleura and dorsum of propodeum also with appressed, pale pubescence, except the mesonotum for the most part with sparse, black pubescence; abdomen clothed with sparse, fulvous pubescence, except the first tergite with sparse, erect, pale hairs; legs clothed with sparse, pale pubescence; mandibles deeply excised beneath; median area of clypeus not bidentate at the anterior margin, the latter straight and defined by a ridge, the surface of the median area transversely concave; scape bicarinate beneath, the carinae equally developed; first and second segments of flagellum equal in length; antennal scrobes slightly carinate above; ocelli small, the distance between the eye margins and the lateral ocelli equal to approximately three times the greatest diameter of the latter; parapsidal furrows present and complete; scutellum with moderate, dense, confluent punctures, not gibbose; enclosed area of propodeum about three times as long as broad, the sides somewhat sinuate, not elevated posteriorly into a tubercle; remainder of dorsum and posterior face of propodeum reticulate; anterior half of sides of propodeum micropunctate, the posterior half reticulate; tegulae glabrous, impunctate, except the anterior and inner margins, and the posterior, inner quadrant with fine punctures and pale pubescence; second tergite almost impunctate on the disk, with a few scattered, moderate punctures, the latter becoming more numerous and closer laterally and posteriorly, except the broad, depressed, posterior margin with sparse, smaller punctures; median, impunctate area of last tergite somewhat gibbose posteriorly, but sloping to the posterior margin of the tergite and not interrupted by an elevation of any kind; first sternite with a median, longitudinal carina on the anterior two-thirds; second sternite with moderately large punctures, sparse medially, closer laterally; sixth and seventh sternites without postero-lateral tubercles; last sternite with a pair of obscure, lateral ridges on the anterior half; intermediate coxae with a small, distinct tooth at the postero-inner angles; calcaria pale; wings fuscous; cell 2nd $R_1 + R_2$ subtruncate distally; cell R_5 receiving vein M_{3+4} slightly beyond the middle; cell R_4 present but less distinct than R_5 and receiving vein M_2 at two-thirds the distance from base to apex; vein m-cu originating on vein Cu slightly anterior to vein $M_4 + Cu_1$. Length, 8 mm.

Holotype. ♂, Mexico: Esquintla, Chiapas (*Crawford*), in Cornell University collection, Ithaca, N.Y.

Paratypes. 2 ♂♂, Mexico: Esquintla, Chiapas (*Crawford*); ♂, Jalapa (*Crawford*).

Related to *ordinaria* (Smith), the terminal tergite being the same in both; differs from *ordinaria* in the clypeus having the anterior margin straight and not bidentate, the dentate, intermediate coxae, and its much smaller size.

Timulla (*Timulla*) *aerolla* (Cameron). (New combination.)

Mutilla aerolla Cameron, 1894, *Biol. Centr.-Amer., Hymen.* **2** : 285, male.
Mutilla aerolla Dalle Torre, 1897, *Cat. Hymen.* **8** : 7, male.
Mutilla aerolla André, 1903, *Gen. Ins.* **11** : 41, n. 1, male.

Type. ♂, Dos Arroyos, Guerrero, 1000 ft., ix. (*H. H. Smith*), in British Museum (Natural History).

Specimens examined. ♂, Mexico : Escuintla, Chiapas (*Crawford*); ♂, Santiago Iscuintla, Jalisco, vii. (*Schumann*); 3 ♂♂, Vulkan, Colima, 1918 (*Joh. Laue*); ♂, Presidio de Mazatlan (*Forrer*); ♂, Mexico (*C. F. Baker*, no. 1785); ♂, Mexico.

The following redescription was made from Cameron's type :

Male. Head, thorax, legs and most of first abdominal segment, black; posterior margin of first tergite and remainder of abdomen ferruginous; head clothed with sparse, pale pubescence, the front below the emargination of the eyes, posterior part of vertex, and genae also with thick, appressed, pale pubescence; thorax clothed with sparse, pale pubescence, the posterior portion of pronotum, dorsum of propodeum, and elevated areas of mesopleura also with thick, appressed, pale pubescence, except the mesonotum (excluding the anterior margin) with sparse, black pubescence; abdomen clothed with sparse, fulvous pubescence and all the tergites with thin fringes of fulvous hairs at the posterior margin, except the disk of the first tergite with sparse, erect, pale hairs; legs clothed with sparse, pale pubescence; mandibles excised beneath; clypeus elevated posteriorly, the glabrous surface transversely concave, the posterior margin of the glabrous surface arcuate; anterior margin of clypeus straight, crenulate; scape dark ferruginous, bicarinate beneath, the anterior carina more strongly developed than the posterior one; first and second segments of the flagellum equal in length; antennal scrobes weakly carinate above; ocelli small, the distance from the eye margins to the lateral ocelli three times the diameter of the latter; scutellum convex, not gibbose, densely, confluently punctate; enclosed area of propodeum as wide posteriorly as anteriorly, the sides undulating and elevated posteriorly to form a tubercle; sides of propodeum distinctly reticulate on the posterior two-thirds; tegulae glabrous, the anterior and inner margins, and the posterior half with pale pubescence; second tergite with moderate punctures, very sparse on the disk, close at the sides; median, impunctate area terminating at a blunt, obscurely bituberculate, glabrous prominence, below the latter the tergite transversely concave, the posterior margin obtusely angulate medially; first sternite with a median, longitudinal carina on the anterior two-thirds; second sternite with sparse, moderate punctures; sternite six without postero-lateral tubercles; sternite seven with very indistinct, postero-lateral tubercles; last sternite with a pair of obscure, anterior, oblique, glabrous ridges, the latter not elevated posteriorly; intermediate coxae with a small, obtuse tubercle at the posterior, inner angle; calcaria pale; wings subfuscous; cell 2nd $R_1 + R_2$ indistinctly truncate at the apex; cell R_5 receiving vein M_{3+4} slightly beyond the middle; cell R_4 present but less distinct than R_5 and receiving vein M_2 at two-thirds the distance from base to apex. Length, 15 mm.

This species is characterised by the bituberculate prominence on the last tergite, with the tubercles small and approximate, the enclosed area of propodeum slightly elevated posteriorly forming a tubercle, the glabrous ridges of the last sternite low and inconspicuous, the arcuate, elevated, posterior margin of the clypeus, and the anterior margin of the clypeus straight, not emarginate.

Timulla (Timulla) bituberculata sp. n.

Male. Head, thorax, first abdominal segment and legs, black, the remainder of the abdomen ferruginous; head clothed with erect and appressed pale pubescence, thick on the

front, posterior part of vertex, and genae, sparse at the ocellar area; thorax clothed with sparse, pale pubescence, the posterior part of pronotum, anterior margin of mesonotum slightly, dorsum of propodeum and mesopleura also with thick, appressed, pale pubescence, except most of the mesonotum with sparse, black pubescence; abdominal tergites except the first clothed with sparse, fulvous pubescence, and each including the first and excepting the last with a posterior marginal fringe of fulvous hairs; first tergite and all the sternites with sparse, erect, pale hairs; legs clothed with sparse, pale hairs; mandibles deeply excised beneath; anterior margin of clypeus broadly, shallowly, angularly emarginate; glabrous area of clypeus elevated posteriorly, the elevated area subrectangular with the postero-lateral angles reflexed; scape bicarinate beneath, not dilated distally, the anterior carinae more strongly developed; first and second segments of flagellum equal in length; antennal scrobes weakly carinate above; ocelli small, the distance between the eye margins and the lateral ocelli equal to approximately three times the greatest diameter of the latter; parapsidal furrows obsolete on anterior third of mesonotum; scutellum evenly convex, not gibbose, with moderately large, close, confluent punctures; enclosed area of propodeum almost four times as long as wide, the sides subparallel, and elevated posteriorly into a distinct tubercle; dorsum and posterior face of propodeum shallowly reticulate; sides of propodeum irregularly and very shallowly reticulate on the posterior three-fourths, anteriorly micropunctate; tegulae glabrous, impunctate, the anterior and inner margins, and the posterior, inner quadrant with pale pubescence; disk of second tergite almost impunctate, glabrous, the lateral areas with moderate, distinct punctures, the slightly depressed, posterior margin with scattered, smaller punctures; median, impunctate area of last tergite interrupted by a pair of obscure, rounded tubercles, well separated, the tergite sloping to the posterior margin beyond the tubercles and indistinctly granulate; posterior margin of last tergite produced and angulate medially; first sternite with a distinct, median, longitudinal carina on the anterior three-fourths; second sternite with moderately large punctures, very sparse and scattered medially, becoming closer laterally; sternite six without postero-lateral tubercles; sternite seven with distinct, postero-lateral tubercles; last sternite with a pair of anterior, lateral glabrous ridges, the latter prominent and terminating in an elevated tubercle; seventh and last sternites infuscated; intermediate coxae distinctly angulate at the posterior, inner angle; calcaria pale; wings fuscous; cell 2nd $R_1 + R_2$ not distinctly truncated distally, three times as long as wide; cell R_5 pentagonal, elongate, receiving vein M_2 at the middle; cell R_4 present but less distinct than R_5 and receiving vein M_2 slightly beyond the middle; vein m-cu meeting vein Cu anterior to $M_4 + Cu_1$. Length, 12 mm.

Holotype. ♂, Cat. no. 52147 U.S. National Museum, MEXICO: Tuxtepec, Oaxaca (*M. Fraire*, no. 581).

Paratypes. ♂, MEXICO: Tuxtepec, Oaxaca, vi.1934 (*J. Cameo* G, no. 1016); ♂, Tuxtepec, Oaxaca, x.1933 (*Moises Fraire*); ♂, Guadalajara (*Crawford*); 2 ♂♂, Teapa, Tabasco, ii. (*H. H. Smith*); ♂, BRITISH HONDURAS: Belize, no. 5908; ♂, COSTA RICA: San Jose, 12.v.1920; ♂, San Jose (*H. Schmidt*); ♂, San Jose (*M. Valerio*); 2 ♂♂, Costa Rica (*Paul Serre*); ♂, COLOMBIA?; ♂, without data.

Somewhat similar in appearance to *aerolla* (Cameron), but the bituberculate prominence of the last sternite has the tubercles more rounded and widely separated, the anterior margin of the clypeus is emarginate, the elevated, glabrous face of the clypeus is subrectangular with the postero-lateral angles reflexed, the glabrous ridges of the last sternite are prominent and terminate in distinct tubercles, and the last two sternites are infuscated. One specimen bears a label "Colombia" which I am inclined to believe is an error in labelling.

Timulla (*Timulla*) *orthona* (Cameron). (New combination.)

Pl. 9, figs. 128 and 129, ♂.

Mutilla orthona Cameron, 1894, *Biol. Centr.-Amer., Hymen.* **2** : 288.
Mutilla orthona Dalle Torre, 1897, *Cat. Hymen.* **8** : 70, male.
Mutilla orthona André, 1903, *Gen. Ins.* **11** : 42, n. 43, male.

Type. ♂, PANAMA : San Feliz, Chiriqui, in British Museum (Natural History).

Specimens examined. ♂, PANAMA : Upper Pequini river, 20.iii.1909 (*A. H. Jennings*) ; ♂, Tabernilla, Canal Zone, 6.ii.1911 (*A. Busck*) ; 2 ♂♂, COSTA RICA : Farm La Caja, 8 km. west of San Jose, ix.1925 ; ♂, La Caja, 1920 (*Paul Serre*) ; ♂, San Jose, 1903 (*Burgdorf*) ; ♂, San Jose, 1913 ; ♂, Ebene von Limon, Las Mercedes, ii.1922 ; ♂, San Carlos, 1902 ; ♂, NICARAGUA : Chontales (*Janson*).

The following additional, descriptive notes have been drawn from Cameron's type :

Head, thorax, first abdominal segment and legs, black, remainder of abdomen ferruginous ; mandibles deeply excised beneath ; median area of clypeus strongly, transversely concave, the posterior, median angle elevated and acute ; scape with a single, well developed carina beneath, but not dilated nor flattened distally ; first and second segments of flagellum equal in length ; ocelli small, the distance between the eye margins and the lateral ocelli equal to slightly more than three times the greatest diameter of the latter ; scutellum almost flat, only slightly convex, densely punctate throughout ; enclosed area of propodeum about three times as long as broad, not elevated posteriorly to form a tubercle ; tegulae large, extending posterior to the posterior margin of the mesonotum about one-fourth their length ; median, impunctate area of last tergite terminating in a large, median, glabrous tooth anterior to the posterior margin of the tergite, the latter bi-emarginate at the posterior margin ; sixth and seventh sternites without postero-lateral tubercles ; last sternite with obscure, lateral ridges on the anterior half ; intermediate coxae tuberculate at the postero-inner angle.

Easily recognised by the prominent, median tooth on the posterior portion of the last tergite ; related to *osberti*, but differs in the non-dilated scape and in the posterior margin of the last tergite being only slightly produced medially to form a blunt tooth.

Timulla (*Timulla*) *osberti* (Cameron). (New combination.)

Pl. 9, figs. 130 and 131, ♂.

Mutilla osberti Cameron, 1894, *Biol. Centr.-Amer., Hymen.* **2** : 284, male.
Mutilla osbertii Dalle Torre, 1897, *Cat. Hymen.* **8** : 70, male.
Mutilla osberti André, 1903, *Gen. Ins.* **11** : 42, n. 44, male.

Type. ♂, MEXICO : Teapa, Tabasco, ii. (*H. H. Smith*), in British Museum (Natural History).

Specimens examined. 2 ♂♂, MEXICO : Teapa, Tabasco, iii. (*H. H. Smith*) ; ♂, Frontero, Tabasco ; ♂, S. Lucrecia, Vera Cruz (*Crawford*) ; 2 ♂♂, Atoyac, Vera Cruz, iv. and v. (*H. H. Smith*) ; 2 ♂♂, Atoyac, Vera Cruz (*Schumann*) ; ♂, Tuxtepec, Oaxaca, x.1933 (*Moises Fraire*) ; 2 ♂♂, Mexico ; 4 ♂♂, HONDURAS : Belize ; ♂, GUATEMALA : Pt. Barrios, 3–14.iii.1905.

The following, supplementary description was drawn from Cameron's type :

Head, thorax, first abdominal segment and legs, black, the remainder of abdomen ferruginous ; mandibles deeply excised beneath ; median area of clypeus transversely concave, the posterior, median angle rounded ; scape very strongly dilated and flattened distally ; first and second segments of flagellum equal in length ; ocelli small, the distance

between the eye margins and the lateral ocelli equal to three times the greatest diameter of the latter; scutellum slightly, evenly convex, not at all gibbose, densely punctate throughout; enclosed area of propodeum about four times as long as its anterior width, the sides slightly sinuate, not elevated posteriorly to form a tubercle; tegulae large, extending about one-fourth their length beyond the posterior margin of the mesonotum; median, impunctate area of last tergite terminating in a prominent, glabrous tooth, beneath which the distal margin of the tergite is produced medially into a prominent tooth; from a lateral view the last tergite appears bidentate distally; sternites six and seven without postero-lateral tubercles; last sternite with obscure, lateral ridges on the anterior half; intermediate coxae tuberculate at the postero-inner angle.

Closely related to *orthona* (Cameron), but differs in the very strongly dilated and flattened scape and in the much more prominent tooth at the middle of the posterior margin of the last tergite.

Timulla (*Timulla*) *amulae* (Cameron). (New combination.)

Pl. 7, figs. 116 and 117, ♂.

Mutilla amulae Cameron, 1894, *Biol. Centr.-Amer., Hymen.* **2** : 277, male.
Mutilla amulae Dalle Torre, 1897, *Cat. Hymen.* **8** : 9, male.
Mutilla amulae André, 1903, *Gen. Ins.* **11** : 41, n. 2, male.

Type. ♂, Mexico : Amula, Guerrero, ix., 6000 ft. (*H. H. Smith*), in British Museum (Natural History).

Specimens examined. 3 ♂♂, Mexico : Amula, Guerrero, 6000 ft., viii. and ix. (*H. H. Smith*); ♂, Mexico (*Sumichrast*).

The above three specimens from Amula were found in the collection of the British Museum (Natural History) undetermined. They were compared with Cameron's type and found to be the same.

The following, supplementary descriptive notes were drawn from Cameron's type :

Head, thorax, first abdominal segment and legs, black, the remainder of the abdomen entirely ferruginous; mandibles not at all excised beneath; clypeus elevated posteriorly, the anterior, glabrous surface subcircular, somewhat concave and with scattered, deep punctures near the outer margin; scape very obscurely bicarinate beneath, both carinae almost obsolete; first and proximal half of second segments of flagellum slightly compressed, the two segments equal in length; ocelli moderate in size, the space between the eye margins and the lateral ocelli equal to approximately three times the diameter of the latter; scutellum strongly convex, but not gibbose, with large, dense, confluent punctures throughout, the anterior, median area with sparse, erect, black hairs, the remainder with pale hairs; enclosed area of propodeum elongate, slightly wider at the anterior margin than elsewhere, elevated posteriorly to form a blunt tubercle; sides of propodeum coarsely reticulate; tegulae glabrous, the anterior and inner margins punctate and black pubescent; second tergite impunctate medially, with moderate, dense, confluent punctures laterally; median, impunctate area of last tergite terminating in a strongly elevated, compressed keel, the dorsal and caudal margins of the latter forming a right angle; posterior margin of last tergite angulately produced medially; sternite six without postero-lateral tubercles; sternite seven with a pair of distinct, postero-lateral tubercles; last sternite with a pair of anterior, oblique, glabrous ridges, the latter elevated posteriorly, and the posterior half of the sternite with small, dense punctures; intermediate coxae without a tooth or tubercle within.

Related to *navasota* (Bradley), but differs in having much smaller ocelli and in being much more conspicuously pale pubescent. The mesopleura are entirely pale pubescent,

while in *navasota* and its subspecies the pubescence of the mesopleura is dark fuscous to black. The structure of the last tergite is the same in both *amulae* and *navasota*. The female may be *mexicana* (Cameron).

Timulla (*Timulla*) *mexicana* (Cameron). (New combination.)

Pl. 3, fig. 50, ♀.

Mutilla mexicana Cameron, 1894, *Biol. Centr.-Amer., Hymen.* **2** : 265, female.
Mutilla mexicana Dalle Torre, 1897, *Cat. Hymen.* **8** : 62, female.
Mutilla mexicana André, 1903, *Gen. Ins.* **11** : 42, n. 40, female.

Type. ♀, Mexico : Oaxaca (*Hoege*), in British Museum (Natural History).

Specimens examined. ♀, Republic of Honduras : Tegucigalpa, iii.1918 (*F. J. Dyer*, no. 38354).

Very distinct in the ferruginous head, thorax and legs, scutellar scale entirely absent, thorax narrower posteriorly than anteriorly, the posterior face of propodeum evenly rounded into the dorsum, the subcarinate, posterior margin of the genae, and the transversely rugulose, pygidial area.

The Honduras specimen was compared with Cameron's type.

Timulla (*Timulla*) *navasota* subsp. *navasota* (Bradley).

Mutilla (*Timulla*) *navasota* Bradley, 1916, *Trans. Amer. ent. Soc.* **42** : 213, male.
Timulla (*Timulla*) *navasota* subsp. *navasota* Mickel, 1937, *Ent. Amer.* (n.s.) **17** : 27, pl. 2, figs. 7 and 9, male and female.

Holotype. ♂, Texas : Brazos county, in Museum of Comparative Zoology, Cambridge, Mass.

Allotype. ♀, without data, taken *in copula* with a ♂, in U.S. National Museum.

Specimens examined. ♂, Mexico; ♂, Patria ?.

No specimens of this subspecies have been seen from definite localities in Mexico, but since specimens have been seen from Laredo and Brownsville, Texas, it undoubtedly will be found in the Mexican states Nuevo Leon and Tamulipas. The very large ocelli and fuscous to black pubescent mesopleura distinguish it from *amulae* (Cameron).

Timulla (*Timulla*) *navasota* subsp. *nebulosa* Mickel.

Timulla (*Timulla*) *navasota* subsp. *nebulosa* Mickel, 1937, *Ent. Amer.* (n.s.) **17** : 29–31, male and female.
Timulla (*Timulla*) *navasota* subsp. *nebulosa* Mickel, 1937, *Rev. Ent. Rio* **7** : 174, male.

Holotype. ♂, Arizona : Douglas, ix.1930 (*W. W. Jones*), in University of Minnesota collection.

Allotype. ♀, Arizona : Santa Rita Mts., 12.viii.1932 (*D. K. Duncan*), in University of Minnesota collection.

Specimens examined. ♂ and ♀, Mexico : Tlahualilo, vii.1905, on cotton (*A. W. Morrill*); ♂, State of Coahuila (*C. A. Purpus*), paratype specimen; ♂, Mexico, no. 192.2 Spinola collection.

The male is easily distinguished from the subsp. *navasota* by the dark brown calcaria and the entirely black pubescent thorax. The female is distinguished from that of the subsp. *navasota* by the strongly converging sides of the thorax and the dark legs.

Timulla (Timulla) antiqua sp. n.

Male. Head, thorax, first abdominal segment and legs, black, the remainder of the abdomen ferruginous; front and vertex with sparse, erect, pale pubescence, without appressed, pale pubescence, except very near the antennal tubercles; genae with sparse, erect and appressed, pale pubescence; thorax clothed with sparse, pale pubescence, the pronotum, anterior margin of mesonotum and elevated areas of mesopleura also with thick, appressed, pale pubescence, except most of the mesonotum and anterior, median area of scutellum with sparse, black pubescence; abdominal segments, except the first tergite, clothed with sparse, fulvous pubescence, and all the tergites and sternites with a fringe of fulvous hairs at the posterior margin, the first tergite with sparse, pale pubescence; legs clothed with sparse, pale hairs; mandibles deeply excised beneath; clypeus transversely elevated posteriorly, the elevated portion of the glabrous surface perpendicular, the posterior margin of the elevated area straight medially, arcuate at the sides; median portion of anterior margin of clypeus broadly, shallowly emarginate, the lateral angles slightly toothed; scape dilated distally, bicarinate beneath, the posterior carina very strongly developed; first and second segments of the flagellum equal in length; antennal scrobes weakly carinate above; ocelli moderate in size, the distance between the eye margins and the lateral ocelli three and one-third times the diameter of the latter; parapsidal furrows distinct; scutellum convex, not at all gibbose, but with an indistinct, smooth line on the anterior half medially, densely, confluently punctate otherwise; enclosed area of propodeum distinct, the sides converging towards the rear and elevated posteriorly into a slight, but distinct tubercle; dorsum and posterior face of propodeum distinctly reticulate; sides of propodeum distinctly reticulate; tegulae glabrous, the anterior and inner margins, and the posterior half punctate and pale pubescent; second tergite with moderate punctures, sparse on the disk, close at the sides; median, impunctate area of last tergite terminating in the short arms of a Y-shaped carina, the arms less than half the length of the stem; first sternite with a median, longitudinal carina on the anterior three-fourths; second sternite with large punctures, sparse medially, close at the sides; postero-lateral tubercles of sternite six obscure; sternite seven with postero-lateral, oblique, glabrous ridges; last sternite with a pair of anterior, lateral, oblique, prominent, glabrous ridges, the sternite depressed laterally and posteriorly; intermediate coxae prominent and angulate at the posterior, inner angle, but without a definite tooth or tubercle; calcaria pale; wings subfuscous; cell 2nd $R_1 + R_2$ indistinctly truncate distally; cell R_5 receiving vein M_{3+4} distinctly beyond the middle; cell R_4 present but less distinct than R_5 and receiving vein M_2 only slightly beyond the middle. Length, 14 mm.

Holotype. ♂, Cat. no. 52148 U.S. National Museum, GUATEMALA : Antigua, 23.vi.1923 (*E. G. Smyth*).

Related to *oajaca* (Blake), but differs in the enclosed area of propodeum being elevated posteriorly, in the strongly developed, posterior carina of the scape, the form of the clypeus, the absence of a definite tubercle or tooth on the intermediate coxae, and the pale pubescent, posterior area of the tegulae.

Timulla (Timulla) taygete sp. n.

Pl. 9, fig. 133, ♂.

Male. Head, thorax, first abdominal segment and legs, black, the remainder of the abdomen ferruginous; head clothed with sparse, erect, pale pubescence, except the area in the vicinity of the ocelli with some erect, fuscous hairs, the pale pubescence thicker and more or less appressed on the front, lateral areas of clypeus and genae; thorax clothed with sparse, pale pubescence, except the mesonotum and anterior, median area of

scutellum with sparse, black pubescence, the pale pubescence thicker and appressed on the pronotum and mesopleura; abdomen clothed with sparse, fulvous pubescence, except that on the disk of the first tergite, and on all the sternites pale; legs clothed with sparse, pale pubescence; mandibles deeply excised beneath; anterior margin of median area of clypeus very broadly and shallowly emarginate; median, glabrous area of clypeus with a depressed row of punctures along the anterior margin, the area elevated posteriorly, the elevated margin evenly arcuate; scape distinctly bicarinate beneath, the two carinae equally developed; first two segments of flagellum approximately equal in length; antennal scrobes weakly carinate above; ocelli small, the distance between the lateral ocelli and the eye margins approximately equal to three times the greatest diameter of the latter; parapsidal furrows complete, deeper posteriorly, and the anterior third filled with fine, pale pubescence; scutellum not gibbose, evenly convex with moderately large, dense punctures, the latter somewhat separated medially; enclosed area of propodeum short, only about twice as long as broad, not elevated posteriorly to form a tubercle; remainder of dorsum and posterior face of propodeum reticulate; anterior third of sides of propodeum micropunctate, the posterior two-thirds punctato-reticulate; tegulae very slightly projecting beyond the posterior margin of mesonotum, glabrous, impunctate, except the anterior and inner margins, and the postero-inner quadrant sparsely, finely punctate and sparsely, pale pubescent; disk of second tergite almost impunctate medially, the lateral areas with moderate punctures, sparse towards the midline and becoming close laterally, the broad, depressed, posterior marginal area with moderate to small punctures, sparse medially, close laterally; median, impunctate area of last tergite terminating in the very short, almost obsolete arms of a Y-shaped carina; first sternite with a median, longitudinal carina on the anterior three-fourths; second sternite almost impunctate medially, with large, close punctures laterally and with a few, fine punctures at the posterior margin; sixth sternite with obscure postero-lateral tubercles; seventh sternite with a pair of low, lateral, slightly oblique ridges; last sternite with a pair of low, lateral, oblique ridges on the anterior half, the ridges almost contiguous posteriorly; intermediate coxae slightly angulate at the postero-inner angles, but not tuberculate; calcaria pale; proximal third of wings subhyaline, the distal two-thirds fuscous; cell 2nd $R_1 + R_2$ subtruncate distally; cell R_5 receiving vein M_{3+4} distinctly beyond the middle; cell R_4 present but less distinct than R_5 and receiving vein M_2 at three-fifths the distance from base to apex; vein m-cu arising on vein Cu distinctly before vein $M_4 + Cu_1$. Length, 11 mm.

Holotype. ♂, Mexico : Chichen Itza, Yucatan, vi.1929, in University of Minnesota collection.

Paratypes. 8 ♂♂, Mexico : Chichen Itza, Yucatan, vi.1929; 2 ♂♂, S. Lucrecia, Vera Cruz (*Crawford*); ♂, Vera Cruz (*Crawford*); 2 ♂♂, Tuxtepec, Oaxaca, x.1933 (*Moises Fraire*); ♂, Mexico; ♂, Guatemala : Alta V. Paz, Cacao Trece Aguas, iii.1931 (*Barber and Schwarz*); ♂, Honduras : Tegucigalpa, 3.ii.1917 (*F. J. Dyer*); ♂, Tegucigalpa, 1.iv.1923 (*S. C. Bruner*); ♂, British Honduras: Belize; ♂, Costa Rica: La Caja, near San Jose, vi.1931 (*M. Valerio*); ♂, Costa Rica (Pacific Seite); ♂, Costa Rica.

Related to *psyra* (Cameron) and *oajaca* (Blake), but differs from both in the evenly arcuate, elevated, posterior margin of the clypeus and the extremely short arms of the Y-shaped carina on the last tergite; also differs from *oajaca* (Blake) in the non-tuberculate intermediate coxae and the low ridges of the last sternite. The arms of the Y-shaped carina are sometimes so short as to appear obsolete in certain lights and then the median, impunctate area of the last tergite may appear to terminate in an acute tubercle. All of the specimens before me show definite, but extremely short, arms to the Y, however, if viewed from the proper angle. The length varies from 8 to 14 mm.

Timulla (*Timulla*) *psyra* (Cameron). (New combination.)

Mutilla psyra Cameron, 1894, *Biol. Centr.-Amer., Hymen.* **2** : 287, male.
Mutilla psyra Dalle Torre, 1897, *Cat. Hymen.* **8** : 75, male.
Mutilla psyra André, 1903, *Gen. Ins.* **11** : 42, n. 50, male.

Type. ♂, North Yucatan (*Gaumer*), in British Museum (Natural History).

The following, additional, descriptive notes were drawn from Cameron's type :

Head, thorax, first abdominal segment and legs, black, the remainder of the abdomen ferruginous; mandibles deeply excised beneath; clypeus elevated posteriorly, the glabrous area transversely concave, the posterior, elevated margin prominently produced medially, the anterior margin straight; scape weakly bicarinate beneath, the two carinae about equally developed; first and second segments of flagellum equal in length; antennal scrobes weakly carinate above; ocelli small, the distance between the eye margins and the lateral ocelli about four times the diameter of the latter; scutellum convex, not at all gibbose, with moderate, close, deep punctures throughout; enclosed area of propodeum elongate, about four times as long as broad, not narrowed posteriorly, the sides subparallel and sinuate; dorsum and posterior face of propodeum coarsely reticulate, the two faces not separated by a raised line; sides of propodeum shallowly reticulate, except the anterior fourth unsculptured; tegulae glabrous, impunctate, the anterior and inner margins punctate and pale pubescent; posterior margin of first abdominal tergite ferruginous; second tergite sparsely punctate on the disk, with moderate, close, but separated, punctures laterally, the posterior fifth slightly depressed; median, impunctate area of last tergite terminating in the flaring arms of a Y-shaped carina, the arms of the Y not short, more than one-third as long as the stem, the latter extending to the posterior margin; first sternite with a median, longitudinal carina on the anterior two-thirds; second sternite with large, shallow punctures, sparse medially, close laterally; sternite six without postero-lateral tubercles; sternite seven with a pair of small, obscure, postero-lateral tubercles; last sternite with a pair of anterior, oblique, glabrous ridges not much elevated posteriorly and somewhat obscure; intermediate coxae without a tubercle within at the posterior margin; calcaria pale.

Only the unique type seen. The median, impunctate area of last tergite terminating in the short arms of a Y-shaped carina, the weak development of the tubercular areas on the terminal sternites, and the medially produced, posterior margin of the clypeus will aid in recognising this species. Related to *taygete*, but it has the elevated, posterior margin of the clypeus evenly arcuate and the arms of the Y-shaped carina shorter.

Timulla (*Timulla*) *oajaca* (Blake).

Pl. 3, fig. 51, ♀.

Mutilla oajaca Blake, 1871, *Trans. Amer. ent. Soc.* **3** : 228, male (*nec* female).
Mutilla ardens Gerstaecker, 1874, *Arch. Naturg.* **40** : 323, male (**syn. n.**).
Mutilla oajaca Blake, 1886, *Trans. Amer. ent. Soc.* **13** : 196, male (*nec* female).
Mutilla oajaca Cameron, 1894, *Biol. Centr.-Amer., Hymen.* **2** : 274, male (*nec* female).
Mutilla ardens Cameron, 1894, *Biol. Centr.-Amer., Hymen.* **2** : 286, male.
Mutilla mazatlanae Cameron, 1894, *Biol. Centr.-Amer., Hymen.* **2** : 294, male (**syn. n.**).
Mutilla ardens Dalle Torre, 1897, *Cat. Hymen.* **8** : 10, male.
Mutilla mazatlanae Dalle Torre, 1897, *Cat. Hymen.* **8** : 59, male.
Mutilla oajaca Dalle Torre, 1897, *Cat. Hymen.* **8** : 67, male (*nec* female).
Mutilla nestor Fox, 1899, *Trans. Amer. ent. Soc.* **25** : 271, male.
Mutilla ardens André, 1903, *Gen. Ins.* **11** : 41, n. 3, male.
Mutilla mazatlanae André, 1903, *Gen. Ins.* **11** : 42, n. 38, male.
Mutilla nestor André, 1903, *Gen. Ins.* **11** : 42, n. 41, male.

Mutilla oajaca André, 1903, *Gen. Ins.* **11** : 42, n. 42, male (*nec* female).
Mutilla nestor Melander, 1903, *Trans. Amer. ent. Soc.* **29** : 323, male.
Mutilla ornata Howard, 1904, *The Insect Book* : Pl. viii, fig. 21, female.
Mutilla (*Timulla*) *nestor* Bradley, 1916, *Trans. Amer. ent. Soc.* **42** : 211, male.
Mutilla (*Timulla*) *oajaca* Bradley, 1916, *Trans. Amer. ent. Soc.* **42** : 212, male.
Timulla (*Timulla*) *oajaca* Mickel, 1937, *Ent. Amer.* (n.s.) **17** : 48–52, pl. I, fig. 4, male and female.

Type. ♂, Mexico (*F. Sumichrast*), in collection of American Entomological Society, Philadelphia, Pa. The type of *nestor* is also in the American Entomological collection; the type of *ardens* (Gerstaecker) is in the Zoologisches Museum der Universität, Berlin; and the type of *mazatlanae* (Cameron) is in the British Museum (Natural History).

Distribution. United States : Texas, New Mexico and Arizona south to Mexico : Morelos, Jalisco and Colima.

Specimens examined. 2 ♂♂, Mexico : Cuernavaca (*Crawford*); 2 ♂♂, Guadalajara, 6.vii. (*McClendon*); ♂, Guadalajara, 23.vii. (*McClendon*); ♂, Guadalajara, 6.viii. (*McClendon*); ♂, Puenta de Ixtla, Morelos, vi. (*H. H. Smith*); ♂, ♀, Santiago Iscuintla, Jalisco, Mexico, vii. (*Schumann*); 5 ♂♂, Vulcan, Colima, 1918 (*Joh. Laue*); ♂, Presidio de Mazatlan (*Forrer*); ♀, Promontorio (Sierra de San Francisco), Durango (*G. Becker*); ♂, Mexico (*F. Sumichrast*); ♂, Mexico.

The types of *oajaca*, *ardens*, *mazatlanae* and *nestor* have all been studied with the result that the three latter are found to be synonyms. Special study was given to the types of *oajaca* and *nestor*. The type of *nestor* is a small specimen of *oajaca*. Occasionally small specimens of *oajaca* are taken in Texas which seem to have relatively small ocelli, but otherwise there are no structural differences between these small specimens and the larger ones taken at or near the same locality.

The female described by Blake as *oajaca* is certainly not the opposite sex of this male. Two cases have been examined of the two sexes taken while mating and the female has been described (Mickel, 1937). The female recorded above from Santiago Iscuintla, Jalisco, Mexico, the same locality data as an accompanying male, is identical with Texas, New Mexico and Arizona specimens.

The males can be recognised at once by the exceedingly short arms of the Y-shaped carina on the last tergite and the tuberculate, intermediate coxae; the abdomen is usually ferruginous, except the first segment black, but occasionally a specimen is seen with the abdomen entirely ferruginous; the form of the clypeus is also characteristic, the posterior, elevated margin of the glabrous area being angulate and produced or reflexed laterally. The female may be recognised by the coarse punctation of the second abdominal tergite, the rugose, pygidial area, and the carina of the first sternite entire.

Timulla (*Timulla*) *grotei* (Blake).

Pl. 3, fig. 52, ♀.

Mutilla grotei Blake, 1871, *Trans. Amer. ent. Soc.* **3** : 228, male.
Mutilla fulviventris Gerstaecker, 1874, *Arch. Naturg.* **40** : 323, male.
Mutilla grotei Blake, 1886, *Trans. Amer. ent. Soc.* **13** : 195–196, male.
Mutilla fulviventris Cameron, 1894, *Biol. Centr.-Amer., Hymen.* **2** : 286–287, male.
Mutilla fulviventris Dalle Torre, 1897, *Cat. Hymen.* **8** : 42, male.
Mutilla grotei Dalle Torre, 1897, *Cat. Hymen.* **8** : 45, male.
Mutilla grotei Fox, 1899, *Trans. Amer. ent. Soc.* **25** : 271, male.
Mutilla fulviventris André, 1903, *Gen. Ins.* **11** : 42, n. 25, male.
Mutilla grotei André, 1903, *Gen. Ins.* **11** : 42, n. 27, male.
Mutilla grotei Melander, 1903, *Trans. Amer. ent. Soc.* **29** : 323, male.
Mutilla (*Timulla*) *grotei* Bradley, 1916, *Trans. Amer. ent. Soc.* **42** : 207, male.

Timulla (*Timulla*) *grotei* Mickel, 1937, *Ent. Amer.* (n.s.) **17** : 78–82, pl. III, fig. 13, male and female.
Timulla (*Timulla*) *grotei* Mickel, 1937, *Rev. Ent. Rio* **7** : 167, male.

Type. ♂, Colorado, in collection of American Entomological Society, Philadelphia, Pa. The type of *fulviventris* is in the Zoologisches Museum der Universität, Berlin.

Distribution. United States : Texas, New Mexico, Arizona, Utah and Colorado; Mexico.

Specimens examined. ♂, Mexico : Guadalajara (*Crawford*); ♀, Guanaguato (*A. Dugès*); ♀, Guanaguato, Quatemala Hillside, 20.ix.1903; ♂, Mexico.

The statement made by me (1937) that this species occurred in Guatemala was based on the locality data of the third specimen listed above. I now think that " Quatemala " does not mean Guatemala but probably refers to some small village in the state of Guanaguato, Mexico.

The male is easily recognised by the entirely black pubescence of the head and thorax and the strongly dilated scape with a thick, conspicuous brush of pale, glittering hairs beneath. The females differ from most other *Timulla* females in lacking pale pubescent markings on the anterior half of the second abdominal tergite, so that the latter is entirely, velvety black except for the pale pubescent band at the posterior margin.

Timulla (*Timulla*) *cyllene* (Cameron). (New combination.)

Pl. 8, fig. 120, ♂.

Mutilla cyllene Cameron, 1894, *Biol. Centr.-Amer., Hymen.* **2** : 266, pl. XIII, figs. 4, 5 and 6, male and female.
Mutilla cyllene Dalle Torre, 1897, *Cat. Hymen.* **8** : 29, male and female.
Mutilla cyllene André, 1903, *Gen. Ins.* **11** : 41, n. 16, male and female.

Lectotype. ♂, Mexico : Chilpancingo, Guerrero, 4600 ft., ix. (*H. H. Smith*), in British Museum (Natural History).

Allotype. ♀, Mexico : Chilpancingo, Guerrero, 4600 ft., ix. (*H. H. Smith*), in British Museum (Natural History).

Cameron's type specimens are labelled as follows : Male, " *Mutilla cyllene* Cameron, male of a "; female, " *Mutilla cyllene* Cameron, Type, female of a ". In publishing the descriptions of the species he placed that of the male first and the female second. The male is therefore selected as the lectotype and the female as the allotype. These seems to be no reason to question that the two are the sexes of the same species.

The following, supplementary description has been drawn from the types :

Male. Head, thorax, first abdominal segment and legs, black, the remainder of the abdomen ferruginous; mandibles deeply excised beneath; clypeus elevated posteriorly, the glabrous surface distinctly concave, the lateral angles of the elevated, posterior margin very prominent; scape about twice as broad at the apex as at the base with a single, well developed carina beneath, finely, closely punctate above; first and second segments of the flagellum equal in length; antennal scrobes carinate above; ocelli moderate to small, the distance between the eye margins and the lateral ocelli equal to slightly more than three times the greatest diameter of the latter; scutellum evenly convex, not gibbose; enclosed area of propodeum about three times as long as broad, the sides converging slightly towards the rear, not elevated posteriorly; sides of propodeum shallowly reticulate, the anterior margin smooth, unsculptured; tegulae glabrous, impunctate, the anterior and inner margins punctate and pale pubescent; second tergite impunctate medially, elsewhere with moderate, distinct punctures; median, impunctate area of last tergite termina-

ting in the arms of a Y-shaped carina, the arms of the Y slightly longer than half the length of the stem, the latter continuing to the posterior margin of the tergite and produced so that the posterior margin is prominently, angulately produced medially; first sternite with a median, longitudinal carina on the anterior two-thirds; second sternite with moderate punctures, sparse medially, closer laterally; sternite six with the postero-lateral tubercles obsolete; sternite seven with a pair of distinct, postero-lateral tubercles; last sternite with a pair of anterior, oblique, glabrous ridges elevated posteriorly into prominent tubercles; intermediate coxae with a distinct tooth at the postero-inner angle.

Female. Front, vertex and scape, ferruginous, the genae black; thorax and legs ferruginous, the tips of the femora blackish; abdomen black above, ferruginous beneath; antennal scrobes carinate above; thorax not broader posteriorly than anteriorly; lateral margins of dorsum of thorax distinctly emarginate at the mesonotal area; scutellar scale present; dorsum of thorax coarsely, deeply, confluently punctate; posterior face of propodeum coarsely reticulate and somewhat asperated, the lateral margins dentate; sides of propodeum with moderate, shallow, scattered punctures; pale pubescent markings of abdomen as follows: first tergite with a complete, broad, posterior marginal band; second tergite with a pair of anterior stripes extending from the anterior margin to slightly beyond the transverse midline, and a posterior marginal band dilated medially and laterally just posterior to the anterior stripes; tergites three to five each with a pair of elongate, rectangular spots, those on tergite five approximate medially, but not confluent; pygidial area irregularly rugose on the anterior half, granulate on the posterior half; first sternite with a median, longitudinal carina on the anterior half, the carina elevated posteriorly; second sternite with moderate, scattered punctures.

Specimens examined. 3 ♂♂, Mexico: Vulcan, Colima (*Joh. Laue*); 4 ♂♂, Guadalajara, Jalisco, 6.vii., 2.viii.1903, 6 and 23.viii. (*McClendon*); 6 ♂♂, Guadalajara (*Crawford*); ♂, Cordova (*Saussure*); ♂ and ♀, Mexico.

The male is closely related to *suspensa* subsp. *sonora* Mickel and may be distinguished from the latter by the characters used in the key. The female is readily recognisable by the black genae and differs from *suspensa* in not having the longitudinal, pale stripes of the second abdominal tergite extending entirely from the anterior to the posterior margins. Several of the males examined have the first abdominal segment slightly to mostly ferruginous rather than entirely black.

Timulla (*Timulla*) *hoegei* (Cameron). (New combination.)

Mutilla hoegei Cameron, 1894, *Biol. Centr.-Amer., Hymen.* **2**: 274, pl. XIII, fig. 18, female (in part).
Mutilla hoegei Dalle Torre, 1897, *Cat. Hymen.* **8**: 47, female.
Mutilla hoegei André, 1903, *Gen. Ins.* **11**: 42, n. 30, female.

Type. ♀, Mexico: Cordova (*Hoege*), in British Museum (Natural History).

Only the unique type seen. The following, descriptive notes were drawn from the type:

Head black, except the scape dark ferruginous; thorax ferruginous; abdomen and legs dark mahogany red, except the intermediate and posterior femora beneath ferruginous; head clothed with sparse, pale pubescence, except the front and vertex with sparse, dark ferruginous pubescence; thorax clothed with sparse, pale pubescence; abdomen beneath clothed with sparse, pale pubescence; abdominal tergites clothed for the most part with black pubescence, the pale pubescent markings as follows: a narrow, posterior marginal band on the first tergite; second tergite with a pair of anterior, linear spots extending from the anterior margin to the transverse midline and a broad, posterior marginal band; tergites three to five each with a pair of quadrate spots, those on tergite five narrowly

separated; antennal scrobes weakly carinate above; thorax not broader posteriorly than anteriorly; lateral margins of dorsum of thorax distinctly emarginate at the mesonotal area; scutellar scale present and distinct; mesonotal-scutellar suture distinct; lateral margins of posterior face of propodeum denticulate; sides of propodeum with sparse, moderate punctures; second tergite with moderate, distinct punctures visible through the pubescence and closely interspersed with fine punctures; pygidial area longitudinally rugose, the rugae converging posteriorly and not reaching the posterior margin, the posterior third of the pygidial area granulate; second sternite with sparse, moderate punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 11 mm.

The type does not have the two, small, median, black spots in the posterior marginal, pale pubescent band of the second tergite as shown in Cameron's illustration. Related to *cyllene* and *obscurella*.

Timulla (Timulla) obscurella sp. n.

Pl. 3, fig. 53, ♀.

Mutilla hoegei Cameron, 1894, *Biol. Centr.-Amer., Hymen.* **2** : 274, female (in part, Guerrero specimen).

Female. Head black, except mandibles proximally, tip of scape and a transverse, anterior spot on the front, ferruginous; thorax entirely ferruginous; abdomen black above, dark mahogany red beneath; legs dark mahogany red; head clothed with sparse, pale pubescence, except the front and vertex with sparse, dark ferruginous pubescence; thorax clothed with sparse, pale pubescence, except the dorsum with sparse, ferruginous pubescence; abdomen beneath clothed with sparse, pale pubescence, the latter thick at the posterior margins of the sternites; abdominal tergites clothed for the most part with black pubescence, the pale pubescent markings as follows: a posterior marginal band on the first tergite; second tergite with a pair of anterior, somewhat broad, linear spots extending from the anterior margin to slightly beyond the transverse midline, and a broad, posterior marginal band, the anterior margin of the latter distinctly sinuate, dilated at the middle and at a point directly behind each anterior spot; tergites three to five each with a pair of spots, those on tergite three subtriangular, those on four and five elongate and rectangular, and those on five approximate, but distinctly separated; antennal scrobes carinate above; thorax distinctly broader posteriorly than anteriorly; lateral margins of dorsum of thorax shallowly, but distinctly emarginate at the mesonotal area; scutellar scale present and distinct; mesonotal-scutellar suture distinct; sides of propodeum with moderate, distinct punctures anteriorly, close, confluent punctures towards the posterior margin; second tergite with moderate punctures visible through the pubescence and closely interspersed with fine punctures; pygidial area longitudinally rugose and granulate on the anterior half, only distinctly granulate on the posterior half; median, longitudinal carina of first sternite elevated posteriorly to form a distinct tooth; second sternite with moderately large, distinct punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 9 mm.

Holotype. ♀, Mexico: Rincon, Guerrero, ix., 2800 ft. (*H. H. Smith*), in British Museum (Natural History).

Paratypes. ♀, Mexico: Cuesta de Misantla (*Trujillo*); ♀, Vulkan, Colima (*Laue*); ♀, Mexico (*Tarzudaki*).

Related to *cyllene* (Cameron), but has the thorax broader posteriorly than anteriorly, the anterior half of the pygidial area longitudinally rugose and the head mostly to entirely black. The three paratypes have the legs bright ferruginous with the tips of the femora blackish, and two of the paratypes have

the ferruginous spot on the front so obscure that the head appears superficially entirely black. Differs from *hoegei* (Cameron) in having the thorax broader posteriorly than anteriorly, the legs either almost entirely bright ferruginous or entirely dark mahogany red, and the anterior spots of the second tergite extending slightly beyond the transverse midline.

Timulla (*Timulla*) *suspensa* subsp. *suspensa* (Gerstaecker).

Pl. 3, fig. 54, ♀.

Mutilla suspensa Gerstaecker, 1874, *Arch. Naturg.* **40** : 299, female.
Mutilla suspensa Cameron, 1894, *Biol. Centr.-Amer., Hymen.* **2** : 268, female.
Mutilla suspensa Dalle Torre, 1897, *Cat. Hymen.* **8** : 89, female.
Mutilla suspensa André, 1903, *Gen. Ins.* **11** : 42, n. 61, female.
Timulla (*Timulla*) *suspensa* subsp. *suspensa* Mickel, 1937, *Ent. Amer.* **17** : 84, female.

Type. ♀, no. 6637, Mexico (*Koppe*), in Zoologisches Museum der Universität, Berlin.

Specimens examined. ♀, Mexico : Chihauhau (*Wickham*); ♀, Tlahaulilo, Durango, 1.ix.1904 (*A. W. Morrill*); ♀, Tlahaulilo, Durango, vii.1905 (*A. W. Morrill*).

This subspecies also occurs in southern Arizona (Mickel, 1937). I believe that the following subspecies is probably the male that belongs here although the only males of subsp. *jonesi* I have seen are from Texas and Arizona. The females are so similar to subsp. *sonora*, differing only in the colour of the intermediate and posterior legs, while the males, subsp. *jonesi*, are so similar to the males of subsp. *sonora* that it seems most probable that subsp. *suspensa* and subsp. *jonesi* are the two sexes of a single subspecies. The females may be recognised at once by the pale pubescent, longitudinal stripes of the second abdominal tergite which are continuous and complete from the anterior to the posterior margins of the tergite.

Timulla (*Timulla*) *suspensa* subsp. *jonesi* Mickel.

Timulla (*Timulla*) *suspensa* subsp. *jonesi* Mickel, 1937, *Ent. Amer.* (n.s.) **17** : 90–91, male.

Holotype. ♂, Arizona : Douglas, 19.vii.1933 (*W. W. Jones*), in University of Minnesota collection.

Specimens have been examined only from Arizona and Texas, but it undoubtedly occurs in northern Mexico. This is probably the male of the preceding subspecies.

Timulla (*Timulla*) *suspensa* subsp. *sonora* Mickel.

Timulla (*Timulla*) *suspensa* subsp. *sonora* Mickel, 1937, *Ent. Amer.* (n.s.) **17** : 84–90, pl. III, fig. 15, female and male.

Holotype. ♀, Cat. no. 50948 U.S. National Museum, New Mexico : Mesilla Park (*Cockerell*).

Allotype. ♂, Texas : Marathon, 7.vi.1908 (*Mitchell and Cushman*), in U.S. National Museum.

This subspecies is found in the United States in Kansas, Colorado, Oklahoma, Texas, New Mexico and Arizona. It undoubtedly occurs in northern Mexico, although no specimens have been seen from that region. The ferruginous legs of the female and the black, second abdominal sternite of the male distinguish it from the subspecies *suspensa* and *jonesi*.

Timulla (*Timulla*) *neobule* Mickel.

Pl. 8, fig. 126, ♂.

Timulla (*Timulla*) *neobule* Mickel, 1937, *Ent. Amer.* (n.s.) **17** : 44–46, male.

Holotype. ♂, Cat. no. 50949 U.S. National Museum, MEXICO : Los Mochis, Sinaloa, 15.vii.1922 (*C. T. Dodds*).

Similar in appearance to *suspensa* subsp. *jonesi*, but has the two parallel carinae on the scape beneath equally developed, the posterior tarsi bright ferruginous and the abdomen entirely ferruginous. The holotype is the only specimen seen from Mexico. Other specimens have been examined at various times from Arizona.

Timulla (*Timulla*) *nicholi* Mickel.

Timulla (*Timulla*) *nicholi* Mickel, 1937, *Ent. Amer.* (n.s.) **17** : 47–48, male.

Holotype. ♀, ARIZONA : Mesa, 11.x.1925 (*A. A. Nichol*), in University of Minnesota collection.

Probably the female of *neobule*. Similar in appearance to *belti* (Cameron) and both have entirely granulate, pygidial areas; differs from *belti* in having the thorax not broader posteriorly than anteriorly, the mesonotal-scutellar suture indistinct and the anterior, pale pubescent stripes on the second tergite somewhat broader.

Timulla (*Timulla*) *belti* (Cameron). (New combination.)

Mutilla belti Cameron, 1894, *Biol. Centr.-Amer., Hymen.* **2** : 265, female.
Mutilla beltii Dalle Torre, 1897, *Cat. Hymen.* **8** : 15, female.
Mutilla belti André, 1903, *Gen. Ins.* **11** : 41, n. 6, female.

Type. ♀, NICARAGUA : Chontales (*Janson*), in British Museum (Natural History).

Similar in appearance to *nicholi*, the preceding species, and differs as described under the latter. Also similar in appearance to *cyllene* (Cameron), but differs from that species in having the head entirely ferruginous, the anterior, pale markings of the second tergite not extending beyond the middle and the pygidial area densely granulate throughout. The following notes made with the examination of Cameron's type will supplement the original description : thorax slightly broader posteriorly than anteriorly; mesonotal-scutellar suture present and distinct; lateral margins of posterior face of propodeum dentate; pygidial area densely granulate throughout.

Timulla (*Timulla*) *nitela* Mickel.

Timulla (*Timulla*) *nitela* Mickel, 1937, *Ent. Amer.* (n.s.) **17** : 43–44, male.

Holotype. ♂, ARIZONA : Douglas, 7.viii.1933 (*W. W. Jones*), in University of Minnesota collection.

Specimens examined. ♂, MEXICO : Tepic, vii. (*Schumann*).

Differs from *neobule* in the black tarsi and transversely concave clypeus.

Timulla (*Timulla*) *prema* (Cameron). (New combination.)

Mutilla prema Cameron, 1894, *Biol. Centr.-Amer., Hymen.* **2** : 292, male.
Mutilla prema Dalle Torre, 1897, *Cat. Hymen.* **8** : 74, male.
Mutilla prema André, 1903, *Gen. Ins.* **11** : 42, n. 47, male.

Type. ♂, Mexico : Acaguizotla, Guerrero, 3500 ft., x. (*H. H. Smith*), in British Museum (Natural History).

The following redescription was made from Cameron's type :

Male. Head, thorax, and legs, black, the abdomen entirely ferruginous; head clothed with sparse, erect and appressed, pale pubescence, the appressed pubescence thicker anterior to the ocelli; thorax clothed with sparse, erect, pale pubescence, and also with thick, appressed, pale pubescence on the pronotum posteriorly and the elevated areas of the mesopleura, except the posterior two-thirds of mesonotum with sparse, black pubescence; abdomen clothed with sparse, pale pubescence, except the posterior fourth of second tergite and all the tergites posterior to the second with sparse, fulvous pubescence and all the tergites with a posterior marginal fringe of fulvous hairs; legs clothed with sparse, pale hairs; mandibles deeply excised beneath; clypeus transversely elevated posteriorly, the elevated portion of the glabrous area subrectangular, the posterior margin of the latter subarcuate, not at all angulate at the sides; anterior margin of the clypeus broadly and very shallowly concave medially; scape bicarinate beneath, the two carinae about equally developed; first and second segments of flagellum equal in length; antennal scrobes carinate above; ocelli moderate in size, the distance between the eye margins and the lateral ocelli equal to three and one-half times the diameter of the latter; parapsidal furrows distinct; scutellum convex, not at all gibbose, with moderate, close, deep punctures throughout; dorsum and posterior face of propodeum coarsely reticulate; enclosed space of propodeum slightly more than three times as long as the breadth anteriorly, the sides subparallel on the anterior two-thirds, then converging to a bluntly angulate tip; sides of propodeum reticulate, except the anterior margin unsculptured; tegulae black, the outer margins dark mahogany red, glabrous and impunctate, except the anterior and inner margins punctate and pale pubescent; second tergite impunctate on the disk, with moderate, close punctures laterally; median, impunctate area of last tergite terminating in the arms of a Y-shaped carina, the arms of the Y long, more than half the length of the stem, the latter extending to the posterior margin of the tergite, causing the latter to be slightly angulate medially; first sternite with a median, longitudinal carina on the anterior two-thirds; second tergite with large, shallow punctures, sparse medially, close laterally; sixth sternite with obscure, postero-lateral tubercles; seventh sternite with the postero-lateral tubercles distinct and elongate; last sternite with a pair of anterior, oblique, glabrous ridges, the latter highest posteriorly; intermediate coxae with a blunt, glabrous tubercle at the posterior inner angle; calcaria pale; wings subfuscous, darkest apically; cell 2nd $R_1 + R_2$ somewhat truncate at the apex; cell R_5 receiving vein M_{3+4} very slightly beyond the middle; cell R_4 present but less distinct than R_5 and receiving vein M_2 distinctly beyond the middle. Length, 12 mm.

Only the unique type seen. Related to *neobule* and *nitela*; differs from *neobule* by the black tarsi; the coarse sculpture of the propodeum and the blunt tubercle on the intermediate coxae within separate it from both *nitela* and *neobule*; the reticulate sides of the propodeum distinguish it from *nitela*.

Timulla (*Timulla*) *senex* (Guérin-Méneville).

Pl. 3, fig. 55, ♀; pl. 8, fig. 121, ♂.

Mutilla senex Guérin-Méneville, 1844, *Icon. Regn. Anim.* **7** : 429, pl. 69, fig. 4, male.
Mutilla senex Lucas, 1857, *in* Ramon de la Sagra, *Hist. Cuba* **7** : 758.
Mutilla senex Cresson, 1865, *Proc. ent. Soc. Philad.* **4** : 110, male.
Mutilla palliceps Cresson, 1865, *Proc. ent. Soc. Philad.* **4** : 112, female.
Mutilla senex Blake, 1871, *Trans. Amer. ent. Soc.* **3** : 230, male.
Mutilla palliceps Blake, 1871, *Trans. Amer. ent. Soc.* **3** : 230, female.
Mutilla senex Girard, 1879, *Traité elem. Ent.* **2** : 994, pl. 75, fig. 4, male.
Mutilla senex Blake, 1886, *Trans. Amer. ent. Soc.* **13** : 199, male.
Mutilla palliceps Blake, 1886, *Trans. Amer. ent. Soc.* **13** : 200, female.

Mutilla pallidiceps Dalle Torre, 1897, *Cat. Hymen.* **8** : 70, female.
Mutilla senex Dalle Torre, 1897, *Cat. Hymen.* **8** : 85, male.
Mutilla senex André, 1898, *Ann. Soc. ent. Fr.* **67** : 38, male and female.
Mutilla palliceps Fox, 1900, *Ent. News, Philad.* **11** : 401, female.
Mutilla senex André, 1903, *Gen. Ins.* **11** : 42, n. 59, male.
Timulla senex Mickel, 1928, *Psyche* **25** : 20, male and female.
Timulla (*Timulla*) *senex* Mickel, 1937, *Rev. Ent. Rio* **7** : 175, male.

Lectotype. ♂, Cuba, coll. Guérin, in Museo Civico di Storia Naturale, Genoa, Italy. Type of *palliceps* (Cresson) in collection of American Entomological Society, Philadelphia, Pa.

Specimens examined. ♀, Cuba : Guane, 24–26.ix.1913; ♂, Santiago de la Vegas, 11.ix.1923 (*S. C. Bruner*); ♂, Santiago de la Vegas, 9.ix.1921 (*J. Acuna*); 4 ♂♂, 1 ♀, Havana (*Baker*); ♂, Havana; ♀, Belmonte, Central Soledad, Cienfuegos, 10.ix.1930 (*R. Dow*); 6 ♂♂, Vilches Potrero, Soledad, Cienfuegos, 16 and 19.viii. and 9.ix.1930 (*R. Dow*); ♂, San Jose, Trinidad Mts., Santa Clara, 26.viii. 1930 (*R. Dow*); ♂ and ♀, Camaguey, 20.viii.1924 (*J. Acuna*); 2 ♀♀, Las Calabazas, Holguin, i.1933 (*G. C. Aguayo*); 4 ♂♂, Las Calabazas, Holguin, vi.1933 (*G. C. Aguayo*); 2 ♂♂, Jobabo, 21.i.1925 (*C. F. Stahl*); 4 ♀♀, Cayamas, 1.i., 4, 16 and 25.ii. (*E. A. Schwarz*); ♂, Isla de Pinos, 27.vii.1912 (*O. R. Oertel*); 6 ♂♂ and 3 ♀♀, Cuba.

In 1928 I stated that the type of *senex* was in the Muséum National d'Histoire Naturelle, Paris. I have since had an opportunity to study the specimens of this species in the Paris collection and find that none of the specimens there is type material. Part of the Hymenoptera in Guérin-Méneville's collection went to Gribodo and is now in the collection of the Museo Civico di Storia Naturale. Three males in that collection are labelled "coll. Guérin." One of these also bears the following label "*Mutilla senex* Guér., icon. R. an., Cuba." The latter specimen has been selected as lectotype, since no type was designated, and apparently all three specimens may have been included in the type material.

Both sexes of this species are variable in respect to the colour of the thorax and legs; the thorax is usually entirely ferruginous but a few of the specimens listed above have the thorax entirely black and intermediates between these two extremes occur; most of the specimens have the legs piceous but a few have the legs bright ferruginous. These variations do not seem to have any specific or subspecific value since they occur at the same time and place and do not seem to be correlated in any way with geographical or seasonal distribution. Both the male and female are easily recognised on account of the head being densely clothed with pale, appressed pubescence throughout.

√

Timulla (Timulla) disgrega sp. n.

Pl. 3, fig. 56, ♀.

Female. Head and abdomen above, black, except the mandibles proximally, the clypeus, tip of scape and first flagellar segment somewhat ferruginous; abdomen beneath and legs dark mahogany red; thorax entirely ferruginous; head clothed with sparse, pale pubescence, except the front and vertex with fuscous to black pubescence; thorax clothed with sparse, pale pubescence, except the dorsum with sparse, ferruginous pubescence; abdomen beneath clothed with sparse, pale pubescence; abdominal tergites for the most part black, the pale pubescent markings as follows : first tergite with a complete, posterior marginal band; second tergite with a pair of longitudinal stripes continuous from the anterior to the posterior margins and a broad, posterior marginal band, the longitudinal stripes slightly constricted just anterior to the posterior marginal band and the latter with the anterior margin sinuate between the stripes; tergites three to five each with a pair of

elongate, rectangular spots, those on tergite five almost contiguous at the posterior margin; antennal scrobes carinate above; thorax not broader posteriorly than anteriorly; lateral margins of dorsum of thorax practically straight, scarcely at all emarginate at the mesonotal area; scutellar scale present and distinct; mesonotal-scutellar suture distinct; lateral margins of posterior face of propodeum strongly denticulate; sides of propodeum anteriorly sparsely punctate, posteriorly with moderate, close, confluent punctures; second tergite with moderate, distinct punctures visible through the pubescence and closely interspersed with fine punctures; pygidial area distinctly granulate throughout; second sternite with moderately large, distinct punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 7 mm.

Holotype. ♀, Cat. no. 52149 U.S. National Museum, Mexico : San Rafael, Jicaltepec, Vera Cruz (*Townsend*).

Paratype. ♀, Mexico : Cordova, Vera Cruz (*Hoege*).

Easily recognised by the granulate pygidial area, pubescent markings of the abdomen, and the distinct, mesonotal-scutellar suture. The paratype has the legs and clypeal area black but is otherwise similar.

Timulla (Timulla) harpagata sp. n.

Pl. 3, fig. 57, ♀.

Female. Head and abdomen, black; legs, except coxae, blackish, more or less tinged with dark ferruginous; thorax and coxae, ferruginous; head clothed with sparse, black pubescence, except posterior margin of vertex and genae entirely with sparse, pale, inconspicuous pubescence; thorax clothed with sparse, pale pubescence, except the dorsum with sparse, ferruginous pubescence; abdomen with sparse, pale pubescence beneath, the tergites clothed with black pubescence and the pale pubescent markings as follows: a complete, narrow, posterior marginal band on the first tergite; a pair of anterior, elongate, rectangular spots or stripes extending from the anterior margin to the transverse midline, and a broad, complete, posterior marginal band with its anterior margin sinuate on the second tergite; tergites three to five each with a pair of spots, those on three and four connected to the lateral margin of each by a line of pale pubescence along the posterior margin, those on tergite five broadly confluent medially and connected laterally as those on the third and fourth; antennal scrobes carinate above; thorax distinctly broader posteriorly than anteriorly; dorsum of thorax slightly but distinctly emarginate at the mesonotal area; lateral margins of dorsum of thorax crenulate; scutellar scale present; mesonotal-scutellar suture distinct immediately anterior to the scutellar scale; posterior face of propodeum perpendicular to the dorsum, its lateral margins dentate; sides of propodeum with moderate, shallow, obscure punctures posteriorly; abdominal tergites finely punctate, with a few, moderate punctures visible through the pale pubescence on the anterior spots of the second tergite; pygidial area longitudinally striate, the striae weaker posteriorly and extending almost to the posterior margin; second sternite glabrous, with moderately large, distinct separated punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 6 mm.

Holotype. ♀, Cat. no. 52150 U.S. National Museum, Costa Rica: Hamburg Farm, 24.i.1925 (*F. Nevermann*).

Paratypes. ♀, Costa Rica: Pacific side (*H. Schmidt*); ♀, Guatemala: Zacapa, 4.xii.1911 (*W. M. Wheeler*); ♀, Los Amatos (*Kellerman*).

Characterised by the longitudinally striate, pygidial area, the thorax broader posteriorly than anteriorly, and the pale pubescent pattern on the abdominal tergites. The paratypes vary in length from 6 mm. to 8 mm.

Timulla (Timulla) pilatrix sp. n.

Pl. 3, fig. 58, ♀.

Female. Head including antennal tubercles (except mandibles proximally and the scape), abdomen and legs (except middle and posterior tibiae and tarsi), black; mandibles proximally, scape and thorax, ferruginous; middle and posterior tibiae and tarsi, dark mahogany red; head clothed with sparse, pale pubescence, except front and vertex with sparse, blackish pubescence; thorax clothed with sparse, pale pubescence, except the dorsum with sparse, ferruginous pubescence; abdomen beneath with sparse, pale pubescence, and sternites two to five with thick, pale pubescence at the narrow, posterior margins; abdominal tergites clothed with black pubescence and with pale pubescent markings as follows: first tergite with a narrow, posterior marginal band; second tergite with a pair of anterior, elongate spots or stripes extending to the mid-transverse line, and a very broad, posterior marginal band, the latter with its anterior margin sinuate; tergites three to five each with a pair of quadrate spots, those on tergite five practically contiguous medially; antennal scrobes carinate above; head and vertex densely deeply punctured; thorax not broader posteriorly than anteriorly; sides of dorsum of thorax crenulate and distinctly, shallowly emarginate at mesonotal area; dorsum of thorax coarsely, longitudinally rugoso-punctate; scutellar scale absent; mesonotal-scutellar suture present, but obscure; lateral margins of posterior face of propodeum denticulate; sides of propodeum with scattered, shallow, moderate punctures; pygidial coarsely, longitudinally striate on the anterior two-thirds, granulate to very finely, longitudinally striate on the posterior third; second sternite glabrous, with large, distinct punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 13 mm.

Holotype. ♀, Cat. no. 52151 U.S. National Museum, MEXICO (1785).

Paratypes. 3 ♀♀, MEXICO (1785); ♀, Yautepec, Morelos (*Hoege*); ♀, GUATEMALA: Geronimo (*Champion*).

The striated, pygidial area, absence of scutellar scale, coarsely sculptured head and thorax, and the broad, pale pubescent markings of the abdomen characterise this species.

Timulla (*Timulla*) *daedala* (Cameron). (New combination.)

Mutilla daedala Cameron, 1894, *Biol. Centr.-Amer., Hymen.* **2**: 269, pl. XIII, fig. 9, female.
Mutilla daedala Dalle Torre, 1897, *Cat. Hymen.* **8**: 29, female.
Mutilla daedala André, 1903, *Gen. Ins.* **11**: 41, n. 17, female.

Type. NORTH YUCATAN (*Gaumer*), in British Museum (Natural History).

Only the unique type seen. Cameron's figure is an excellent one, showing the form of the thorax, broader posteriorly than anteriorly, and the form of the golden pubescent markings on the abdomen. The pygidial area of the type specimen is indistinctly, irregularly rugose anteriorly, glabrous, unsculptured posteriorly.

Timulla (Timulla) aureata sp. n.

Pl. 3, fig. 59, ♀.

Female. Head and abdomen above, black, except mandibles proximally, antennal tubercles and antennae (more or less infuscated distally), ferruginous; thorax, abdomen beneath and legs, all ferruginous; head clothed with sparse, pale pubescence, except the front and vertex with dark ferruginous to blackish pubescence; thorax clothed with sparse, pale pubescence, except the dorsum with sparse, ferruginous pubescence; abdomen beneath clothed with sparse, pale pubescence; abdominal tergites with golden, appressed pubescent

markings as follows: a complete, posterior marginal band on the first tergite; second tergite with a pair of large, anterior, subcircular spots extending from the anterior margin to slightly beyond the middle, broadly connected laterally to the golden pubescent, lateral margin of the tergite, and only narrowly separated posteriorly from a very broad, posterior marginal band occupying the posterior third to half of the tergite, the band wider medially than laterally; tergites three to five with broad bands, that on the third broadly interrupted medially, the fourth moderately interrupted medially and the fifth only very narrowly interrupted medially; antennal scrobes carinate above; thorax distinctly broader posteriorly than anteriorly; lateral margins of dorsum of thorax crenulate, only slightly emarginate at the mesonotal area; scutellar scale present and distinct; mesonotal-scutellar suture indistinct; lateral margins of posterior face of propodeum denticulate; sides of propodeum sparsely punctate anteriorly, coarsely punctate posteriorly; second tergite with moderate, distinct punctures visible through the pubescence and closely interspersed with fine punctures; pygidial area irregularly rugose on the anterior half, the posterior half granulate; second sternite with large, distinct punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 7·5 mm.

Holotype. ♀, Cat. no. 52152, U.S. National Museum, Costa Rica: Navarro Farm, near Cartago, 15.v.1925, 1500 m. (*F. Nevermann*).

Paratypes. ♀, Costa Rica: San Jose (*Burgdorf*); ♀, Monte Redondo, iii.1902; ♀, Costa Rica, x.; 2 ♀♀, Costa Rica; ♀, Honduras: Tegucigalpa, 1.iv.1923 (*S. C. Bruner*); ♀, Guatemala: San Geronimo (*Champion*); ♀, British Honduras: Belize; ♀, Benque Viejo (*Father Stanton*); 3 ♀♀, Mexico: Chichen Itza, Yucatan, vi.1929; ♀, Vera Cruz (*Crawford*); ♀, Cordova.

Related to *daedala* (Cameron), but differs in having a black head, and in having the golden pubescent markings of the second tergite more extensive. In a few specimens the anterior spots of the second tergite are subtly connected with the posterior band. The length of the paratypes varies from 6·5 mm. to 9 mm. This may be the female of *taygete*.

Timulla (Timulla) philyra sp. n.

Pl. 3, fig. 60, ♀.

Female. Entirely ferruginous, except the tips of the mandibles black and the antennae infuscated beyond the first flagellar segment; head clothed with sparse, pale pubescence, except the front with sparse, ferruginous pubescence and the vertex with a broad, transverse band of pale golden, appressed pubescence; thorax with sparse, pale pubescence, except the dorsum with sparse, ferruginous pubescence; abdomen with sparse, pale pubescence beneath; abdominal tergites clothed with black pubescence, except the first and the lateral areas of the second with sparse, pale pubescence, and with pale golden pubescent markings as follows: first tergite with a moderately broad, posterior marginal band; second tergite with a pair of anterior, large, elongate ovate spots extending to the transverse midline and with a very broad, posterior marginal band, the latter with the anterior margin strongly sinuate; tergites three to five each with a pair of subquadrate spots, the latter broader than long but not extending to the lateral margins of the tergite, and those of the fifth contiguous at the posterior margin of the tergite; antennal scrobes carinate above; thorax not broader posteriorly than anteriorly; lateral margins of dorsum of thorax crenulate and shallowly emarginate at the mesonotal area; dorsum of thorax coarsely, densely, deeply punctate; scutellar scale present and distinct; mesonotal-scutellar suture not distinct; lateral margins of posterior face of propodeum dentate; sides of propodeum with large, close punctures posteriorly; pygidial area irregularly rugose on the anterior two-thirds, granulate on the posterior third; second sternite with very large,

close punctures throughout; legs clothed with sparse, pale pubescence; calcaria pale. Length, 9 mm.

Holotype. ♀, Mexico, in collection American Entomological Society, Philadelphia, Pa.

Characterised by its entirely ferruginous colour, the thorax not broader posteriorly than anteriorly, the transverse, golden pubescent band on the vertex, and the golden pubescent markings of the abdomen.

Timulla (Timulla) murcia sp. n.

Pl. 4, fig. 61, ♀.

Female. Ferruginous, except the antennae beyond the first flagellar segment infuscated and the abdomen above, black; head clothed with sparse, pale pubescence, except the front and vertex with sparse, ferruginous pubescence; thorax clothed with sparse, pale pubescence, except the dorsum with sparse, ferruginous pubescence; abdomen beneath clothed with sparse, pale pubescence; abdominal tergites clothed with black pubescence, except the first, and the lateral areas of the second with sparse, pale pubescence, and with the pale pubescent markings as follows: first tergite with a posterior marginal band; second tergite with a pair of anterior, broad, elongate ovate spots extending slightly beyond the transverse midline, and a broad, posterior marginal band, the latter with its anterior margin sinuate; anterior spots of second tergite with the inner margins distinct and well defined, but with the outer margin indistinct and grading off into sparse, pale pubescence; tergites three to five each with a pair of transverse spots, the latter extending along the posterior margin of each tergite to the postero-lateral angle, those on tergite five contiguous medially at the posterior margin; antennal scrobes carinate above; front and vertex moderately punctate; thorax elongate, not broader posteriorly than anteriorly; lateral margins of dorsum of thorax crenulate and distinctly emarginate at the mesonotal area; scutellar scale present but small and not conspicuous; mesonotal-scutellar suture indistinct; dorsum of thorax rounded into the posterior face of propodeum, the lateral margins of the latter denticulate; sides of propodeum with moderate, separated punctures throughout; second tergite with moderate punctures visible through the pubescence and closely interspersed with fine punctures; anterior two-thirds of pygidial area longitudinally rugose, the posterior third granulate; second sternite with large, close punctures throughout; legs clothed with sparse, pale pubescence; calcaria pale. Length, 9 mm.

Holotype. ♀, Mexico: Santa Rosa, 4.xii.1894 (*C. H. T. Townsend*), in collection of Cornell University, Ithaca, New York.

Related to the nearctic *dubitata* subsp. *dubitata* (Smith). Differs in having the abdominal tergites for the most part black and black pubescent, the anterior margin of the posterior marginal band on the second tergite sinuate instead of angulately dilated at the middle, and the head and dorsum of thorax less strongly punctate.

Timulla (Timulla) absentia sp. n.

Pl. 4, fig. 62, ♀.

Female. Head, thorax and legs, ferruginous, except the tips of the mandibles and antennae beyond the first flagellar segment, blackish; abdomen black; head clothed with sparse, pale pubescence, except the front and vertex with sparse, ferruginous pubescence and the vertex also with a pair of obscure, subtriangular spots of appressed, pale pubescence; thorax clothed with sparse, pale pubescence, except the dorsum with sparse, very dark ferruginous pubescence; abdomen beneath with sparse, pale pubescence; pale pubescent

markings of abdominal tergites as follows : first tergite with a complete, posterior marginal band; second tergite with a pair of anterior, elongate ovate spots not extending beyond the transverse midline, and a broad, posterior marginal band with its anterior margin strongly sinuate; third and fourth tergites without pale pubescent markings; fifth tergite with a pair of large, transverse spots contiguous medially at the posterior margin of the tergite; antennal scrobes carinate above; thorax distinctly broader posteriorly than anteriorly; lateral margins of dorsum of thorax crenulate, slightly diverging towards the rear and only very shallowly emarginate at the mesonotal area; scutellar scale small but present and distinct; mesonotal-scutellar suture weak; lateral margins of posterior face and dorsum of propodeum strongly dentate; sides of propodeum with close, moderate punctures posteriorly; second tergite finely punctate; anterior three-fourths of pygidial area longitudinally rugose, the posterior fourth distinctly granulate; second sternite glabrous, with moderate, scattered punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 8 mm.

Holotype. ♀, Costa Rica, in Museo Civico di Historia Naturale, Genoa, Italy.

Distinguished by the ferruginous head, absence of pale pubescent markings on the third and fourth tergites, and the longitudinally rugose, pygidial area.

Timulla (Timulla) rhanis sp. n.

Pl. 4, fig. 63, ♀.

Female. Entirely ferruginous, except the tips of the mandibles and the antennae beyond the first flagellar segment, blackish; head clothed with pale pubescence, very sparse on the front, sparse and appressed on the genae, and dense and appressed on the entire vertex; thorax clothed with sparse, pale pubescence, except the dorsum with sparse, ferruginous pubescence; abdomen clothed above and beneath with sparse, pale pubescence, except the area on the second tergite between the anterior stripes, a transverse, median area immediately in front of the posterior marginal band of the second tergite, and the median area between the pale pubescent spots on tergites three to five, all with thick, appressed, black pubescence, a broad, transverse area on the second tergite posterior to the anterior spots with sparse, black pubescence, and the pale pubescent markings of the tergites as follows : a complete, posterior marginal band on the first tergite; a pair of narrow, elongate, linear, anterior stripes extending almost to the transverse midline and a broad, posterior marginal band, the latter with its anterior margin sinuate; tergites three to five each with a pair of elongate, rectangular spots, those on tergite five distinctly separated; antennal scrobes carinate above; thorax slightly wider posteriorly than anteriorly; lateral margins of dorsum of thorax crenulate and only very slightly emarginate at the mesonotal area; scutellar scale present and distinct; mesonotal-scutellar suture obsolete; lateral margins of posterior face of propodeum dentate; sides of propodeum coarsely punctate; second tergite coarsely punctured with large, close, confluent punctures, the latter separated towards the lateral margins; pygidial area irregularly rugose throughout; second sternite with large, close punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 11 mm.

Holotype. ♀, Mexico : Puente de Ixtla, Morelos, 3500 ft., vi. (*H. H. Smith*), in British Museum (Natural History).

Paratypes. ♀, Mexico : Zopopam, Jalisco, 11.ix.1903 (*W. L. Tower*); ♀, Mexico D.S. : Temascaltetec, 1931 (*G. D. Hinton*); ♀, Mexico : Vulkan, Colima, 1918 (*J. Laue*).

Readily recognised by the coarsely punctured, second abdominal tergite and the densely, pale pubescent vertex.

Timulla (Timulla) operosa sp. n.

Pl. 4, fig. 64, ♀.

Female. Entirely ferruginous, except the tips of the mandibles, the flagellum, and the tips of the femora, blackish; head clothed with sparse, pale pubescence, except the front and vertex with sparse, ferruginous pubescence; thorax clothed with sparse, pale pubescence, except the dorsum with sparse, ferruginous pubescence; abdomen clothed beneath with sparse, pale pubescence, the latter thicker at the posterior margin of the sternites; abdominal tergites clothed with very dark ferruginous to black pubescence, except the first with sparse, erect, pale pubescence, the pale pubescent markings as follows: first tergite with a moderately broad, posterior marginal band; second tergite with a pair of narrow, elongate, linear, anterior, pale pubescent stripes extending to the transverse midline and a broad, posterior marginal band, the latter with its anterior margin slightly sinuate; tergites three to five each with a pair of subquadrate spots, those on the fifth almost but not quite contiguous medially at the posterior margin; antennal scrobes carinate above; thorax not broader posteriorly than anteriorly; lateral margins of dorsum of thorax crenulate, distinctly but not deeply emarginate at the mesonotal area; scutellar scale present and well developed; mesonotal-scutellar suture present; lateral margins of posterior face of propodeum dentate; sides of propodeum with sparse, moderate, distinct punctures, except very coarsely punctate at the posterior margin; second tergite with moderately large, close punctures, the latter confluent on the disk, becoming separated at the sides; anterior two-thirds of pygidial area longitudinally rugose, the posterior third densely granulate; legs clothed with sparse, pale pubescence; calcaria pale. Length, 11 mm.

Holotype. ♀, Mexico: Guadalajara, Jaliseo, xii.1918 (*McClendon*), in collection of American Entomological Society, Philadelphia, Pa.

Paratypes. ♀, Mexico: Guadalajara, Jalisco, xii.1918 (*McClendon*); 3 ♀♀, Guadalajara, Jalisco (*Crawford*); ♀, Jalisco.

Closely related to *rhanis*, but differs conspicuously in having the vertex with only sparse, ferruginous pubescence and in having the second tergite less conspicuously marked with black. The paratypes vary in length from 8 mm. to 11 mm.

Timulla (Timulla) selene sp. n.

Pl. 4, fig. 65, ♀.

Female. Head, abdomen and legs, except the antennal tubercles, scape and flagellum beneath, more or less black; thorax ferruginous, except the posterior face of propodeum with a median, posterior blotch of black; head clothed with sparse, pale pubescence, except the front and vertex also with some sparse, blackish pubescence; thorax clothed with sparse, pale pubescence, except the dorsum with sparse, very dark ferruginous, almost blackish pubescence; abdomen beneath clothed with sparse, pale pubescence, thicker at the posterior margin of the sternites; abdominal tergites clothed with black pubescence, except the first with sparse, pale pubescence, the pale pubescent markings of the tergites as follows: first tergite with a complete, posterior marginal band; second tergite with a pair of anterior, linear stripes extending to the midline from the anterior margin, and a posterior marginal band broad at the sides, narrowing towards the middle and angulately dilated medially; tergites three to five each with a pair of linear spots, those on tergite five widely separated; antennal scrobes carinate above; thorax slightly broader posteriorly than anteriorly; lateral margins of dorsum of propodeum crenulate and shallowly, but distinctly, emarginate at the mesonotal area; scutellar scale present and distinct; mesonotal-scutellar suture not distinct; lateral margins of posterior face of propodeum denticulate; sides of propodeum with moderate, separated punctures; second tergite

with moderate, distinct punctures visible through the pubescence and closely interspersed with fine punctures; anterior two-thirds of pygidial area irregularly rugose, the posterior third granulate; second sternite glabrous, with moderate, distinct punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 7·5 mm.

Holotype. ♀, PANAMA : Bugaba (*Champion*), in British Museum (Natural History).

Paratype. ♀, PANAMA : Volcan de Chiriqui, 2500–4000 ft. (*Champion*).

This may be the same as *porcata* (Cameron), which it closely resembles, differing chiefly in having a black blotch on the posterior, median area of the posterior face of propodeum.

Timulla (*Timulla*) *porcata* (Cameron). (New combination.)

Mutilla porcata Cameron, 1894, *Biol. Centr.-Amer., Hymen.* **2** : 275, female (in part, *nec* variety).
Mutilla porcata Dalle Torre, 1897, *Cat. Hymen.* **8** : 73, female.
Mutilla porcata André, 1903, *Gen. Ins.* **11** : 42, n. 46, female.

Type. ♀, PANAMA : Volcan de Chiriqui, 2500–4000 ft. (*Champion*), in British Museum (Natural History).

Only the unique type seen. Very similar to *selene*, the preceding species, but has an entirely ferruginous thorax. Black markings on the thorax are specific in many other cases in *Timulla*, and until evidence is at hand to prove that *selene* and *porcata* are the same it seems best to regard them as two species. The variety from Caldera, Panama, mentioned by Cameron is entirely different from *porcata* and is the same as *nisa* described in this paper.

Additional characters not mentioned by Cameron are : thorax slightly broader posteriorly than anteriorly; lateral margins of dorsum of thorax slightly emarginate at the mesonotal area; scutellar scale present; mesonotal-scutellar suture indistinct; lateral margins of posterior face of propodeum denticulate; sides of propodeum with small, scattered punctures; anterior half of pygidial area irregularly rugose, the posterior half weakly granulate.

Timulla (Timulla) raui sp. n.

Pl. 4, fig. 66, ♀.

Female. Head, abdomen and legs, black, the mandibles, antennal tubercles and tip of scape only very obscurely tinged with ferruginous; thorax entirely ferruginous; head clothed with sparse, pale pubescence, except the front and vertex with sparse, black pubescence; thorax clothed with sparse, pale pubescence, except the dorsum with sparse, ferruginous pubescence; abdomen beneath clothed with sparse, pale pubescence, the latter very thick at the posterior margin of the sternites; abdominal tergites in part black pubescent, the pale pubescent markings as follows : a complete, posterior marginal band on the first tergite; second tergite with a pair of anterior, somewhat broad stripes extending from the anterior margin to the transverse midline and a broad, complete posterior marginal band, the anterior margin of the latter distinctly sinuate; tergites three to five each with a pair of elongate, rectangular spots, those on tergite five widely separated; antennal scrobes carinate above; thorax distinctly broader posteriorly than anteriorly; lateral margins of dorsum of propodeum somewhat crenulate, not at all emarginate at the mesonotal area, the two margins slightly diverging posteriorly; scutellar scale present and distinct; mesonotal-scutellar suture indistinct; lateral margins of posterior face of propodeum denticulate; sides of propodeum with large, close punctures throughout; second tergite with moderately large, distinct punctures visible through the pubescence and

closely interspersed with fine punctures; pygidial area longitudinally rugose anteriorly, the rugae converging and connected by transverse rugae posteriorly, the posterior fifth of the pygidial area distinctly granulate; second sternite with large, distinct punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 9 mm.

Holotype. ♀, Cat. no. 52153 U.S. National Museum, PANAMA: Canal Zone, Barro Colorado Island (*Phil Rau*, 7950).

Similar to *porcata* (Cameron), but is larger and differs in having the lateral margins of the dorsum of thorax not emarginate, the sides of propodeum coarsely punctate throughout and in the sculpture of the pygidial area.

Timulla (*Timulla*) *subrobusta* (Cameron). (New combination.)

Pl. 4, fig. 67, ♀.

Mutilla subrobusta Cameron, 1894, *Biol. Centr.-Amer., Hymen.* **2**: 271, pl. XIII, fig. 10, female.
Mutilla subrobusta Dalle Torre, 1897, *Cat. Hymen.* **8**: 89, female.
Mutilla subrobusta André, 1903, *Gen. Ins.* **11**: 42, n. 60, female.

Type. ♀, PANAMA: Bugaba, 800–1500 ft. (*Champion*), in British Museum (Natural History).

Specimens examined. 2 ♀♀, PANAMA: Bugaba (*Champion*); 11 ♀♀, Volcan de Chiriqui, 2500–4000 ft. (*Champion*); ♀, COSTA RICA: Turrialba.

Closely related to *clonia*, the following species, and separated from it as indicated in the key. The black blotch on the propodeum is constant in all the specimens examined, is elongate and extends from the scutellar scale to the posterior margin of the thorax; the coppery reflection of the dark pubescence on the abdomen is especially noticeable. The pygidial area is finely rugoso-granulate on the anterior two-thirds, almost glabrous on the posterior third.

Timulla (*Timulla*) *clonia* (Cameron). (New combination.)

Pl. 4, fig. 68, ♀.

Mutilla clonia Cameron, 1894, *Biol. Centr.-Amer., Hymen.* **2**: 272, female.
Mutilla clonia Dalle Torre, 1897, *Cat. Hymen.* **8**: 25, female.
Mutilla clonia André, 1903, *Gen. Ins.* **11**: 41, n. 12, female.

Type. ♀, GUATEMALA: Pantaleon, 1700 ft. (*Champion*), in British Museum (Natural History).

Specimens examined. ♀, GUATEMALA: Zapote (*Champion*).

Closely related to *subrobusta* (Cameron), differing as indicated in the key. The pygidial area is delicately rugoso-granulate on the anterior two-thirds, weakly granulate on the posterior third.

Timulla (Timulla) vacuna sp. n.

Pl. 4, fig. 69, ♀.

Female. Head and abdomen, black, except the mandibles proximally, antennal tubercles slightly, scape entirely and proximal two-thirds of flagellum, ferruginous, and the abdomen dark ferruginous beneath; thorax and legs ferruginous, except the posterior face of propodeum with a median, elongate, black spot extending from the scutellar scale to the posterior margin of thorax; the coxae entirely and the tips of the femora, blackish; head clothed with sparse, pale pubescence, except the front with sparse, dark pubescence and the vertex with a pair of large, subtriangular spots of appressed pale pubescence; thorax with sparse, pale pubescence, except the dorsum with sparse, ferruginous pubes-

cence; abdomen beneath with sparse, pale pubescence, the latter thick at the posterior margin of the sternites; abdominal tergites clothed for the most part with black pubescence, the pale pubescent markings as follows: first tergite with a complete, posterior marginal band; second tergite with a pair of anterior, elongate, sublinear spots extending from the anterior margin to the transverse midline and a broad, posterior marginal band angulately dilated at the middle and roundly dilated laterally in line with the anterior spots; tergites three to five each with a pair of elongate, rectangular spots, those on tergite five practically contiguous at the posterior margin; antennal scrobes carinate above; thorax slightly broader posteriorly than anteriorly; lateral margins of dorsum of thorax weakly crenulate and shallowly emarginate at the mesonotal area; scutellar scale present and distinct; mesonotal-scutellar suture indistinct; lateral margins of posterior face of propodeum denticulate; sides of propodeum with moderate punctures posteriorly; second tergite with moderate, distinct punctures visible through the pubescence and closely interspersed with fine punctures; pygidial area irregularly rugoso-granulate on the anterior three-fourths, weakly granulate on the posterior fourth; second sternite with moderately large, distinct punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 7 mm.

Holotype. ♀, Cat. no. 52154 U.S. National Museum, GUATEMALA: Cacao, Alta Vera Paz, on cotton (*Schwarz and Barber*).

Paratype. ♀, locality label illegible.

Related to *clonia* (Cameron), but has the pleural areas of the thorax entirely ferruginous, the last abdominal segment black, the pubescent spots of the fifth tergite contiguous (well separated in *clonia*), and the femora distally less extensively black.

Timulla (*Timulla*) *impudica* (Cameron). (New combination.)

Pl. 4, fig. 70, ♀.

Mutilla impudica Cameron, 1894, *Biol. Centr.-Amer., Hymen.* **2**: 270, pl. XIII, fig. 11, female.
Mutilla impudica Dalle Torre, 1897, *Cat. Hymen.* **8**: 49, female.
Mutilla impudica André, 1903, *Gen. Ins.* **11**: 42, n. 31, female.

Type. ♀, MEXICO: Chilpancingo, Guerrero, 4600 ft., vi. (*H. H. Smith*), in British Museum (Natural History).

Specimens examined. ♀, MEXICO: Chilpancingo, Guerrero, 4600 ft. (*H. H. Smith*).

Related to *subrobusta*, *clonia* and *lilea*. Differs from all three in having the posterior marginal, pale pubescent band much more strongly dilated laterally than medially, the medial dilation very weak. Thorax not wider posteriorly than anteriorly; head without pale pubescent markings on the vertex; mesonotal-scutellar suture present, but inconspicuous; propodeum marked with black medially; anterior, pale pubescent spots linear and extending slightly beyond the transverse midline; pale pubescent spots on tergite five barely contiguous at the posterior margin; pygidial area irregularly rugose anteriorly, granulate posteriorly.

Timulla (*Timulla*) *lilea* (Cameron). (New combination.)

Pl. 4, fig. 71, ♀.

Mutilla lilea Cameron, 1894, *Biol. Centr.-Amer., Hymen.* **2**: 273, female.
Mutilla lilea Dalle Torre, 1897, *Cat. Hymen.* **8**: 53, female.
Mutilla lilea André, 1903, *Gen. Ins.* **11**: 42, n. 33, female.

Type. ♀, Panama: San Felix (*Champion*), in British Museum (Natural History).

Specimens examined. ♀, Costa Rica: Cache (*H. Rogers*); ♀, Costa Rica; ♀, Panama: Alhajuela, Canal Zone, 11.ii.1921 (*J. G. Sanders*); ♀, Darien; ♀, Western Colombia.

Related to *impudica* (Cameron), but differs as indicated in the key. The specimens from Canal Zone, Darien and Colombia have the black on the posterior face of propodeum almost obsolete so that the thorax appears almost entirely ferruginous.

Timulla (Timulla) segesta sp. n.

Pl. 4, fig. 72, ♀.

Female. Head and abdomen, black, except the mandibles proximally, the antennal tubercles and proximal half of antennae, ferruginous, the distal half of antennae infuscated; thorax and legs ferruginous, except the tips of the coxae and femora, blackish; head clothed with sparse, pale pubescence, except the front and vertex with sparse, fuscous pubescence, and the vertex with a pair of large, subtriangular spots of sparse, appressed, pale pubescence; thorax clothed with sparse, pale pubescence, except the dorsum with sparse, ferruginous pubescence; abdomen beneath clothed with sparse, pale pubescence, the latter thicker at the posterior margin of the sternites; abdominal tergites clothed mostly with black pubescence, the pale pubescent markings as follows: first tergite with a complete, posterior marginal band; second tergite with a pair of anterior, narrow, elongate ovate spots extending from the anterior margin to the transverse midline and a broad, posterior marginal band, the anterior margin of the latter sinuate, angulately dilated medially and roundly dilated each side at a point directly posterior to the anterior spots; tergites three to five each with a pair of elongate, rectangular spots, those on tergite five distinctly separated; antennal scrobes carinate above; thorax slightly broader posteriorly than anteriorly; lateral margins of dorsum of thorax slightly emarginate at the mesonotal area; scutellar scale present and distinct; mesonotal-scutellar suture distinct; lateral margins of posterior face of propodeum denticulate; sides of propodeum with sparse, small punctures; second tergite with moderate, distinct punctures visible through the pubescence and closely interspersed with fine punctures; pygidial area irregularly rugose on the anterior half, the posterior half weakly granulate; second sternite with moderate, sparse distinct punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 6·5 mm.

Holotype. ♀, Cat. no. 52155 U.S. National Museum, Panama: Las Cruces, Canal Zone, 10.ii.1911 (*Aug. Busck*).

Related to *collina*, *suffusa* and *damalis*, from which it may be separated by the characters used in the key.

Timulla (Timulla) collina sp. n.

Pl. 4, fig. 73, ♀.

Female. Head and abdomen, black, except the mandibles proximally, the antennal tubercles, pedicel and first two segments of flagellum, ferruginous, and the abdominal sternites, very dark mahogany red; thorax and legs, ferruginous, except the tips of the femora blackish; head clothed with sparse, pale pubescence, except the front posteriorly and the vertex with sparse, fuscous pubescence; thorax clothed with sparse, pale pubescence, except the dorsum clothed with sparse, ferruginous pubescence; abdomen beneath clothed with sparse, pale pubescence, the latter thicker at the posterior margin of the

sternites; abdominal tergites mostly black pubescent, the pale pubescent markings as follows: first tergite with a complete, posterior marginal band; second tergite with a pair of moderately broad, elongate ovate spots extending from the anterior margin to the transverse midline, and a broad, posterior marginal band, the latter with the anterior margin sinuate, subangulately emarginate medially and roundly emarginate each side directly posterior to the anterior spots; tergites three to five each with a pair of elongate, rectangular spots, those on tergite five united posteriorly along the posterior margin; antennal scrobes carinate above; thorax distinctly broader posteriorly than anteriorly; lateral margins of dorsum of thorax shallowly emarginate at the mesonotal area; scutellar scale present and distinct; mesonotal-scutellar suture distinct; lateral margins of posterior face of propodeum denticulate; sides of propodeum with small, sparse punctures except the posterior margin with large, confluent punctures; second tergite with moderate punctures, very distinct through the pubescence and closely interspersed with fine punctures; pygidial area irregularly rugose on the anterior half, weakly granulate on the posterior half; second sternite with moderately large, distinct punctures; legs clothed with sparse, pale pubescence, calcaria pale. Length, 7 mm.

Holotype. ♀, Cat. no. 52156 U.S. National Museum, Mexico: Colima, Colima (*W. M. Mann*).

Paratypes. ♀, Mexico: Colima, Colima (*L. Conradi*); ♀, Colima, vii. (*Goldsmith*); ♀, Vulkan, Colima, 1918 (*Laue*); ♀, Santiago Iscuintla, Jalisco, vii. (*Schumann*); ♀, Mexico (*Baker*); ♀, Honduras: Cantarranas, Rio Choluteca, 9.viii.1920, 2200 ft.

Related to *segesta*, but differs in lacking pubescent spots on the vertex, slightly broader thorax posteriorly and larger, pubescent, anterior spots on the second tergite.

Timulla (Timulla) damalis sp. n.

Pl. 4, fig. 74, ♀.

Female. Head and abdomen, black, except the mandibles proximally, antennal tubercles and scape, ferruginous, and the abdomen beneath, very dark mahogany red; thorax and legs, ferruginous, the femora darker distally; head clothed with sparse, pale pubescence, except the front and vertex mostly with sparse, very dark ferruginous, almost blackish pubescence; thorax clothed with sparse, pale pubescence, except the dorsum with sparse, ferruginous pubescence; abdomen beneath clothed with sparse, pale pubescence, the latter thicker at the posterior margin of the sternites; abdominal tergites mostly black pubescent, the pale pubescent markings as follows: a complete, posterior marginal band on the first tergite; second tergite with a pair of moderately broad, linear spots or stripes extending from the anterior margin to the transverse midline, and a very broad, complete, posterior marginal band, the anterior margin of the latter sinuate, dilated medially and each side at a point directly behind the anterior spots; tergites three to five each with a pair of subquadrate spots extending along the posterior margin of the tergite to the lateral margin, those on tergite five confluent medially and posteriorly, and those on tergite four confluent medially at the posterior margin in certain lights; antennal scrobes carinate above; thorax slightly but distinctly broader posteriorly than anteriorly; lateral margins of dorsum of thorax shallowly but distinctly emarginate at the mesonotal area; scutellar scale present and distinct; mesonotal-scutellar suture indistinct; lateral margins of posterior face of propodeum denticulate; sides of propodeum with sparse, small punctures throughout; second tergite with moderate, distinct punctures visible through the pubescence and closely interspersed with fine punctures; pygidial area irregularly rugose on the anterior half, the posterior half weakly granulate; second sternite with moderately large, distinct punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 6 mm.

Holotype. ♀, Cat. no. 52157 U.S. National Museum, MEXICO: San Rafael, Jicaltepec, Vera Cruz (*Townsend*).

Paratypes. ♀, GUATEMALA: San Geronimo (*Champion*); ♀, MEXICO.

Related to *collina*, but differs in having the pubescent spots on tergites three to five transverse and in the less strongly punctured second tergite.

Timulla (Timulla) delecta sp. n.

Pl. 4, fig. 75, ♀.

Female. Head and abdomen, black, except the mandibles proximally and the antennae (infuscated distally), ferruginous; thorax and legs, ferruginous, except the coxae and the tips of the femora, blackish; head clothed with sparse, pale pubescence, except the front with pale fuscous pubescence and the vertex with a pair of large, subtriangular spots of pale, appressed pubescence; thorax clothed with sparse, pale pubescence, except the dorsum with sparse, ferruginous pubescence; abdomen beneath with sparse, pale pubescence, the latter thicker at the posterior margins of the sternites; abdominal tergites clothed mostly with black pubescence, the pale pubescent markings as follows: a complete, posterior marginal band on the first tergite; second tergite with a pair of anterior, elongate ovate spots extending from the anterior margin to the transverse midline, and a broad, posterior marginal band, the anterior margin of the latter sinuate, dilated medially and at a point behind each anterior spot; tergites three to five each with a pair of subquadrate spots, those on tergite five confluent medially at the posterior margin; antennal scrobes carinate above; thorax not broader posteriorly than anteriorly; lateral margins of dorsum of thorax shallowly, but distinctly, emarginate at the mesonotal area; scutellar scale present and distinct; mesonotal-scutellar suture distinct; lateral margins of posterior face of propodeum denticulate; sides of propodeum with sparse, small punctures; second tergite with moderate punctures visible through the pubescence and closely interspersed with fine punctures; pygidial area irregularly rugose on the anterior half, the posterior half weakly granulate, almost glabrous; second sternite with moderate, distinct punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 6 mm.

Holotype. ♀, MEXICO: Teapa, Tabasco, ii. (*H. H. Smith*), in British Museum (Natural History).

Paratypes. 3 ♀♀, MEXICO: Teapa, Tabasco, iii. (*H. H. Smith*); ♀, Atoyac, Vera Cruz, v. (*H. H. Smith*); ♀, St. Lucrecia, Vera Cruz (*Frederick Knab*); 6 ♀♀, Mexico.

Closely resembles *collina*, but differs in having black antennal tubercles, a pair of pale pubescent spots on the vertex, and the thorax not broader posteriorly than anteriorly. Differs from *hoegei* in being much smaller, in the ferruginous antennae, the pair of pale pubescent spots on the vertex, and the ferruginous legs.

Timulla (Timulla) suffusa sp. n.

Pl. 4, fig. 76, ♀.

Female. Head black, except the front very dark ferruginous, almost black, and the antennal tubercles, scape, pedicel and first flagellar segment, ferruginous; abdomen black above, dark ferruginous beneath; thorax and legs, ferruginous, the tips of the femora blackish; head clothed with sparse, pale pubescence, except that on the front fuscous and the vertex with a pair of subtriangular, pale, appressed pubescent spots; thorax clothed with sparse, pale pubescence, except the dorsum with sparse, ferruginous pubescence; abdomen beneath clothed with sparse, pale pubescence, the latter thicker at the posterior

margin of the sternites; abdominal tergites mostly black pubescent, the pale pubescent markings as follows: a complete, posterior marginal band on the first tergite; second tergite with a pair of anterior, broad, linear spots extending from the anterior margin to slightly beyond the transverse midline, and a broad, posterior marginal band, the anterior margin of the latter sinuate, dilated medially and each side at a point directly behind the anterior spots; tergites three to five each with a pair of transverse spots connected along the posterior margin of the tergite to the lateral margin, those on tergite five practically contiguous medially on the posterior margin; antennal scrobes carinate above; thorax slightly broader posteriorly than anteriorly; lateral margins of dorsum of propodeum shallowly, but distinctly, emarginate at the mesonotal area; scutellar scale present and distinct; mesonotal-scutellar suture distinct; lateral margins of posterior face of propodeum denticulate; sides of propodeum with sparse, small punctures throughout; second tergite with moderate, distinct punctures visible through the pale pubescence, but not so obvious in the black pubescence, and closely interspersed with fine punctures; anterior half of pygidial area longitudinally rugose, the posterior half distinctly granulate; longitudinal carina on first sternite dentiform posteriorly; second sternite with moderately large, distinct punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 7·5 mm.

Holotype. ♀, Mexico, in collection of American Entomological Society, Philadelphia, Pa.

Related to *damalis*, but differs in having a pair of pubescent spots on the vertex, the anterior spots of the second tergite extending slightly beyond the middle, the distinctly granulate posterior half of pygidial area and the dark ferruginous front.

Timulla (Timulla) direpta sp. n.

Pl. 4, fig. 77, ♀.

Female. Head, abdomen and legs, black, except the mandibles proximally tinged with ferruginous; thorax entirely ferruginous; head clothed with sparse, pale pubescence, except the front and vertex clothed with sparse, black pubescence; thorax clothed with sparse, pale pubescence except the dorsum clothed with sparse, ferruginous pubescence; abdomen clothed beneath with sparse, pale pubescence, thicker at the posterior margin of the sternites; abdominal tergites in part black pubescent, the pale pubescent markings as follows: a broad, complete, posterior marginal band on the first tergite; second tergite with a pair of anterior, rather broad, sublinear spots extending from the anterior margin to the transverse midline, and a broad, complete, posterior marginal band, the anterior margin of the latter distinctly sinuate; tergites three to five each with a pair of rectangular spots slightly longer than broad, those on tergites three and four obscurely connected with the lateral margins along the posterior margin, and those on tergite five also connected medially along the posterior margin; antennal scrobes carinate above; thorax equal in width posteriorly and anteriorly; lateral margins of dorsum of thorax very shallowly emarginate at the mesonotal area; scutellar scale present and distinct; mesonotal-scutellar suture present, but not conspicuous; lateral margins of posterior face of propodeum denticulate; most of sides of propodeum with scattered, moderately small punctures, the posterior margin coarsely, confluently punctate; second tergite with moderate, distinct punctures visible through the pubescence and closely interspersed with fine punctures; pygidial area mostly longitudinally rugose, the tip distinctly granulate; second sternite with moderately large, distinct punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 10 mm.

Holotype. ♀, Mexico: Teapa, Tabasco, iii. (*H. H. Smith*), in British Museum (Natural History).

Paratype. ♀, Mexico: Teapa, Tabasco, iv. (*H. H. Smith*).

Somewhat similar in appearance to *damalis*, but larger, the legs entirely black, and the pygidial area longitudinally rugose. The paratype is only 7·5 mm. long.

Timulla (Timulla) incensita sp. n.

Pl. 4, fig. 78, ♀.

Mutilla oajaca Blake, 1871, *Trans. Amer. ent. Soc.* **3** : 228, female (*nec* male).
Mutilla oajaca Blake, 1886, *Trans. Amer. ent. Soc.* **13** : 196, female (*nec* male).

Female. Head, abdomen and legs, black, except the mandibles proximally and the scape obscurely tinged with ferruginous, the antennal tubercles distinctly black; thorax entirely ferruginous; head clothed with sparse, pale pubescence, except the front and vertex with sparse, black pubescence; thorax clothed with sparse, pale pubescence, except the dorsum clothed with sparse, ferruginous pubescence; abdomen beneath clothed with sparse, pale pubescence, very thick at the posterior margin of the sternites; abdominal tergites in part black pubescent, the pale pubescent markings as follows : a broad, complete, posterior marginal band on the first tergite; second tergite with a pair of broad, anterior, sublinear spots extending from the anterior margin to the transverse midline, the spots somewhat broader anteriorly than posteriorly, and a very broad, complete, posterior marginal band, the anterior margin of the latter strongly sinuate, strongly, angulately dilated medially; tergites three to five each with a pair of rectangular spots, slightly longer than broad, those on tergite five united medially along the posterior margin of the tergite; antennal scrobes carinate above; thorax distinctly broader posteriorly than anteriorly; lateral margins of dorsum of propodeum distinctly, but not deeply, emarginate at the mesonotal area; scutellar scale present and distinct; mesonotal-scutellar suture distinct; lateral margins of posterior face of propodeum denticulate; sides of propodeum with moderate, distinct, sparse punctures on the anterior three-fifths, the posterior two-fifths coarsely, confluently punctate; second tergite with moderate, distinct punctures visible through the pubescence and closely interspersed with fine punctures; anterior four-fifths of pygidial area finely, longitudinally rugose, the posterior fifth distinctly granulate; second sternite with moderately large, distinct punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 12 mm.

Holotype. ♀, Mexico (Oaxaca?); Blake paratype of *oajaca* no. 4580, in collection of American Entomological Society, Philadelphia, Pa.

This is not the female of *oajaca* as Blake thought. It is unique in collections. Blake's figure in the original description is excellent for illustrating the pale pubescent pattern of the abdomen. The thorax broader posteriorly than anteriorly, punctation of the sides of propodeum, and sculpture of pygidial area are characters which distinguish it from species similar in appearance.

Timulla (Timulla) phiala sp. n.

Pl. 4, fig. 79, ♀.

Female. Head, abdomen and legs, black, except the mandibles proximally, antennal tubercles and scape at the tip, tinged with ferruginous; thorax entirely ferruginous; head clothed with sparse, pale pubescence, except the front and vertex with sparse, black pubescence; thorax clothed with sparse, pale pubescence, except the dorsum clothed with sparse, ferruginous pubescence; abdomen beneath clothed with sparse, pale pubescence, very thick at the posterior margin of the sternites; abdominal tergites in part black pubescent, the pale pubescent markings as follows : a complete, posterior marginal band on the first tergite; second tergite with a pair of somewhat broad, anterior, sublinear spots extend-

ing from the anterior margin to the transverse midline, and a broad, complete, posterior marginal band, the anterior margin of the latter strongly sinuate, distinctly, angularly dilated medially and laterally just posterior to the anterior spots; tergites three to five each with a pair of elongate, rectangular spots, those on tergite five confluent medially on the posterior margin of the tergite; antennal scrobes carinate above; thorax distinctly wider posteriorly than anteriorly; lateral margins of dorsum of propodeum almost straight, scarcely emarginate at the mesonotal area; scutellar scale present and distinct; mesonotal-scutellar suture present, but not conspicuous; lateral margins of posterior face of propodeum denticulate; sides of propodeum with sparse, small punctures, except the extreme posterior margin coarsely punctate; second tergite with moderate, distinct punctures visible through the pubescence and closely interspersed with fine punctures; anterior four-fifths of pygidial area longitudinally rugose, the posterior fifth granulate; second sternite with moderate, distinct punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 9 mm.

Holotype. ♀, Costa Rica, in Muséum National d'Histoire Naturelle, Paris.

Paratypes. 2 ♀♀, Costa Rica (*Emery*); ♀, Farm La Caja, 8 km. westl. San Jose, ix.1925; ♀, Costa Rica.

Similar in appearance to *incensita*, but differs as indicated in the key and also has the anterior spots of the second tergite equal in width posteriorly and anteriorly, and the spots on tergite five are just confluent medially on the posterior margin of the tergite, not connected by a transverse line.

Timulla (Timulla) wheeleri sp. n.

Pl. 4, fig. 80, ♀.

Female. Head, ventral third to half of meso- and metapleural areas, abdomen and legs, black, except mandibles proximally, antennal tubercles and tip of scape, ferruginous; thorax ferruginous, except as above; head clothed with sparse, pale pubescence, except the front and most of the vertex with sparse, black pubescence, the posterior margin of the vertex with sparse, appressed, pale pubescence; thorax with sparse, pale pubescence, except the dorsum with sparse, dark ferruginous pubescence; abdomen beneath with sparse, pale pubescence, thicker at the posterior margin of the sternites; abdominal tergites in part black pubescent, the pale pubescent markings as follows: first tergite with a complete, posterior marginal band; second tergite with a pair of moderately broad, linear spots extending from the anterior margin to the transverse midline, and a moderately broad, complete, posterior marginal band, the anterior margin of the latter slightly sinuate, with a narrow, angular, shallow emargination medially; tergites three to five each with a pair of subquadrate spots, slightly longer than broad, those on tergite five distinctly separated; antennal scrobes carinate above; thorax very slightly broader posteriorly than anteriorly; lateral margins of dorsum of propodeum shallowly emarginate at the mesonotal area; scutellar scale present and distinct; mesonotal-scutellar suture well developed; lateral margins of posterior face of propodeum denticulate; anterior fourth of sides of propodeum impunctate, the posterior three-fourths with moderately large, close, distinct punctures; second tergite with moderate, distinct punctures visible through the pubescence and closely interspersed with fine punctures; anterior half of pygidial area longitudinally rugose, the posterior half glabrous, unsculptured; second sternite with moderately large, distinct punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 7·5 mm.

Holotype. ♀, Costa Rica: San Jose, xi.1911 (*W. M. Wheeler*), in Museum of Comparative Zoology, Cambridge, Mass.

The black, ventral third of meso- and metapleural areas, pubescent pattern of second tergite, strongly punctate sides of propodeum, thorax broader posteriorly than anteriorly, and the glabrous, posterior half of pygidial area distinguish this species.

Timulla (*Timulla*) *centroamericana* (Dalle Torre). (New combination.)

Pl. 5, fig. 81, ♀.

Mutilla centralis Cameron, 1894, *Biol. Centr.-Amer., Hymen.* **2** : 271, female (*nec* Burmeister).
Mutilla centroamericana Dalle Torre, 1897, *Cat. Hymen.* **8** : 22, female.
Mutilla centralis André, 1903, *Gen. Ins.* **11** : 41, n. 10, female.

Type. ♀, Panama : Volcan de Chiriqui, 2500–4000 ft. (*Champion*), in British Museum (Natural History).

Specimens examined. ♀, Panama : Volcan de Chiriqui, 2500–4000 ft. (*Champion*); ♀, David (*Champion*); ♀, Cristobal, Canal Zone, 6.vii.1918 (*H. F. Dietz*).

Cameron recorded a specimen from Paso Antonio, Guatemala, in his original description, but no specimen with that data is in the collection of the British Museum (Natural History), and the specimen listed above as type bears a type label in Cameron's handwriting. This specimen agrees with the original description. *T. centroamericana* is closely related to *colombiana* and *trimaculosa*, differing from both in having the thorax entirely ferruginous without any black markings. The pubescent markings of the abdomen are similar in *centroamericana* and *colombiana*. This species also differs from *trimaculosa* and *colombiana* in having the sides of the propodeum sparsely punctured throughout with only a few, large punctures at the posterior margin.

Timulla (Timulla) trimaculosa sp. n.

Pl. 5, fig. 83, ♀.

Female. Head and abdomen, black, except the mandibles proximally, the antennal tubercles, and the antennae (infuscated at the tip), ferruginous; thorax and legs, ferruginous, except the mesothoracic area with a pair of lateral, black spots on the mesonotum and extending on to the dorsal areas of the meso- and metapleura, and a posterior, median, black spot on the posterior face of propodeum; head clothed with sparse, fuscous to black pubescence; thorax with sparse, pale pubescence, except the dorsum with sparse, ferruginous pubescence; abdomen beneath with sparse, pale pubescence, the latter thicker at the posterior margin of the sternites; abdominal tergites clothed for the most part with black pubescence, the pale pubescent markings as follows : a posterior marginal band on the first tergite narrowly interrupted medially; second tergite with a pair of anterior, narrow, linear stripes extending from the anterior margin to slightly, but distinctly, beyond the transverse midline, and a narrow, complete, posterior marginal band, the anterior margin of the latter only obscurely sinuate; tergites three to five each with a pair of linear spots, those on tergite five widely separated; antennal scrobes carinate above; thorax not broader posteriorly than anteriorly; lateral margins of dorsum of thorax distinctly shallowly emarginate at the mesonotal area; scutellar scale present but small; mesonotal-scutellar suture obsolete; lateral margins of posterior face of propodeum denticulate; sides of propodeum with small, scattered punctures anteriorly, large, close punctures posteriorly; second tergite with moderate punctures visible through the pubescence and closely interspersed with fine punctures; pygidial area irregularly rugose on the anterior two-thirds, the posterior third granulate; second sternite with large, close, distinct punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 9 mm.

Holotype. ♀, Cat. no. 52158 U.S. National Museum, JAMAICA.

Paratype. ♀, JAMAICA : Liguanea Plain, xi.–xii.1911 (*C. T. Brues*).

Very closely related to *colombiana*, the following species. The principal differences are expressed in the key. *T. colombiana* has dense, narrow, pale pubescent bands at the posterior margin of sternites three and four as well as sternite two, while *trimaculosa* has the posterior, pale pubescent bands almost obsolete on sternites three and four. Also related to *centroamericana* (D. T.), but the latter has the thorax entirely ferruginous.

Timulla (Timulla) colombiana sp. n.

Pl. 5, fig. 82, ♀.

Female. Same colour and same pubescent pattern as in *trimaculosa*, except the tips of the femora infuscated and the posterior marginal, pale pubescent band of the first tergite complete, the band narrowed medially, but not interrupted; also differs from *trimaculosa* in having the anterior half of the sides of propodeum sparsely punctured, the posterior half with large, close punctures, scarcely confluent, the second sternite with only moderate, distinct punctures, and the posterior margins of sternites two, three and four with a distinct, narrow, pale pubescent band. Length, 9 mm.

Holotype. ♀, COLOMBIA : Rio Frio, Magdalena, 10.vii.1927 (*G. Salt*), in University of Minnesota collection.

Paratypes. ♀, COLOMBIA : Santa Marta; ♀, El Banco, Magdalena Valley (*C. Allen*); ♀, VENEZUELA : San Fernando de Apure; 2 ♀♀, Maracay; ♀, Venezuela.

Very closely related to *trimaculosa* as indicated above. Also closely related to *centroamericana* (D. T.), from which it differs in the black maculations of the thorax and more strongly punctured sides of propodeum, *centroamericana* having the sides of propodeum sparsely punctured throughout.

Timulla (Timulla) dominica sp. n.

Pl. 5, fig. 84, ♀.

Female. Head including the mandibles, antennal tubercles and antennae, abdomen and legs, black; thorax entirely ferruginous; head clothed with sparse, pale pubescence, except the front and vertex with sparse, black pubescence; thorax clothed with sparse, pale pubescence, except the dorsum with sparse, ferruginous pubescence; abdomen beneath clothed with sparse, pale pubescence, thicker at the posterior margins of the sternites; abdominal tergites clothed mostly with black pubescence, the pale pubescent markings as follows: posterior margin of first tergite thinly pale pubescent laterally, black pubescent medially; second tergite with a pair of anterior, narrow, linear spots not reaching the anterior margin and extending slightly posterior to the transverse midline, and with a broad, posterior marginal band, the anterior margin of the latter only slightly sinuate, almost straight; tergites three to five each with a pair of linear spots, those on tergite five connected posteriorly by a pale pubescent line along the posterior margin; antennal scrobes carinate above; thorax slightly broader anteriorly than posteriorly; lateral margins of dorsum of propodeum narrowed slightly behind the pronotal area, but not emarginate at the mesonotal area; scutellar scale present and distinct; mesonotal-scutellar suture distinct; lateral margins of posterior face of propodeum denticulate; sides of propodeum with moderately small, sparse punctures anteriorly, large, close punctures posteriorly; second tergite with moderate punctures closely interspersed with fine punctures, but the moderate punctures obscure beneath the pubescence; anterior half of

pygidial area irregularly rugose, the posterior half weakly granulate; median longitudinal carina of first sternite strongly elevated posteriorly forming a blunt tooth; second sternite with large, close, almost confluent punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 9 mm.

Holotype. ♀, Cat. no. 52159 U.S. National Museum, DOMINICA (*A. H. Verrill*).

Related to *guadeloupensis*; differs in the form of the posterior marginal band of the second tergite, its anterior margin almost straight, the less extensive, anterior pale lines on the second tergite, black antennal tubercles and more closely punctured second sternite.

Timulla (*Timulla*) *guadeloupensis* Mickel.

Pl. 5, fig. 85, ♀.

Timulla (*Timulla*) *guadeloupensis* Mickel, 1937, *Rev. Ent. Rio* **7** : 167–169, female.

Holotype. ♀, GUADELOUPE ISLAND, W.I. (*J. Pérez*), in Muséum National d'Histoire Naturelle, Paris.

Similar in appearance to *dominica*; differs in having ferruginous, antennal tubercles, a complete, posterior marginal band of pale pubescence on the first tergite, the anterior, linear spots of the second tergite extending to the anterior margin, the posterior marginal band of the second tergite strongly, angulately dilated medially, and the second sternite with large, sparse punctures.

Timulla (*Timulla*) *derelicta* (Smith). (New combination.)

Pl. 5, fig. 86, ♀.

Mutilla derelicta Smith, 1879, *Descr. N. Sp. Hymen.* : 226, female.
Sphaerophthalma derelicta Blake, 1886, *Trans. Amer. ent. Soc.* **13** : 255, female.
Sphaerophthalma derelicta Cameron, 1895, *Biol. Centr.-Amer., Hymen.* **2** : 345, female.
Mutilla derelicta Dalle Torre, 1897, *Cat. Hymen.* **8** : 30, female.
Ephuta derelicta André, 1903, *Gen. Ins.* **11** : 59, n. 131, female.

Type. ♀, CENTRAL AMERICA : Aceytuno, in British Museum (Natural History).

Specimens examined. ♀, COSTA RICA : San Jose, 7.iii.1902 (*M. Cary*); 3 ♀♀, Costa Rica ; 2 ♀♀, GUATEMALA : San Geronimo (*Champion*) ; 4 ♀♀, Capetillo (*G. C. Champion*); ♀, Duenas (*G. C. Champion*); 3 ♀♀, Guatemala; 3 ♀♀, MEXICO.

An examination of Smith's type disclosed that *derelicta* belongs to the genus *Timulla*. Specimens exactly like the type are in a number of collections, but had remained unrecognised on account of the error in determining its generic relationships. Related to *ferocula* and *trifolia* but has the thorax more elongate, not broader posteriorly than anteriorly, the lateral margins of the dorsum of thorax distinctly emarginate at the mesonotal area, and the head and thorax very coarsely punctured. Specimens vary in length from 7·5 mm. to 14 mm.

Timulla (Timulla) gerstaeckeri sp. n.

Pl. 5, fig. 87, ♀.

Mutilla lineola var. Gerstaecker, 1874, *Arch. Naturg.* **40** : 300, female.

Female. Head and abdomen, black, except the mandibles proximally, antennal tubercles, scape and abdomen beneath, very dark ferruginous; legs very dark mahogany

red, almost black; thorax entirely ferruginous; head coarsely punctate, clothed with sparse, pale pubescence, except the front and vertex with sparse, fuscous pubescence; thorax with sparse, pale pubescence, except the dorsum with sparse, ferruginous pubescence; abdomen beneath clothed with sparse, pale pubescence, the latter very thick at the posterior margin of the sternites; abdominal tergites clothed in part with black pubescence, the pale pubescent markings as follows: a complete, posterior marginal band on the first tergite; second tergite with a pair of moderately broad, linear, anterior spots extending from the anterior margin to the transverse midline and a very broad, posterior marginal band, the anterior margin of the latter almost straight, only slightly sinuate; tergites three to five each with a pair of transverse spots extending to the lateral margins, those on tergite five narrowly, but distinctly, separated at the posterior margin; antennal scrobes carinate above; thorax not broader posteriorly than anteriorly; lateral margins of dorsum of propodeum only slightly emarginate at the mesonotal area; scutellar scale present and distinct; mesonotal-scutellar suture present, but not conspicuous; lateral margins of posterior face of propodeum denticulate; sides of propodeum with large, distinct, close punctures throughout; second tergite with moderate distinct punctures visible through the pubescence and closely interspersed with fine punctures; pygidial area indistinctly, longitudinally rugose anteriorly, distinctly granulate posteriorly; second sternite with large, distinct, close punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 9 mm.

Holotype. ♀, Colombia: Bogotá (*Lindig*), no. 19281 in Zoologisches Museum der Universität, Berlin.

Related to *derelicta* (Smith), but has the thorax much less constricted at the mesonotal area, the sides of the propodeum punctate throughout, and the anterior spots on the second tergite linear, not broad and subovate.

Timulla (*Timulla*) *falsa* (Dalle Torre). (New combination.)

Pl. 5, fig. 88, ♀.

Mutilla rufofemorata Cameron, 1894, *Biol. Centr.-Amer., Hymen.* **2**: 264, pl. XIII, fig. 1, female (*nec* Smith).
Mutilla falsa Dalle Torre, 1897, *Cat. Hymen.* **8**: 39, female.
Mutilla rufofemorata André, 1903, *Gen. Ins.* **11**: 42, n. 55, female (*nec* Smith).

Type. ♀, Mexico: Amula, Guerrero, ix., 6000 ft. (*H. H. Smith*), in British Museum (Natural History).

Specimens examined. 2 ♀♀, Mexico: Amula, Guerrero, ix., 6000 ft. (*H. H. Smith*); ♀, Temascaltetec, 1931 (*G. D. Hinton*); ♀, Morelia, 1892 (*E. Dugès*).

Very distinct and easily recognisable by the ferruginous head, thorax and legs, the posterior margin of the genae distinctly carinate, the absence of the scutellar scale, the thorax broader posteriorly than anteriorly and the blunt tooth on the lateral margins of the posterior face of the propodeum. The two specimens from Amula were compared with the type. Since the name *rufofemorata* is preoccupied in *Mutilla* by Smith, 1879, Dalle Torre's name must stand.

Timulla (Timulla) asperata sp. n.

Pl. 5, fig. 89, ♀.

Female. Entirely ferruginous, except the tips of the mandibles, the flagellum and the tips of the femora, black; head clothed with sparse, pale pubescence, except the front and vertex with sparse, ferruginous pubescence; thorax clothed with sparse, pale pubescence, except the dorsum with sparse, ferruginous pubescence; abdomen beneath clothed with

sparse, pale pubescence, thicker at the posterior margin of the sternites; abdominal tergites clothed in part with sparse, black pubescence, the pale pubescent markings as follows: first tergite with a complete, posterior marginal band; second tergite with a pair of broad, linear, anterior spots extending from the anterior margin to the transverse midline, and a complete, somewhat narrow, posterior marginal band, the anterior margin of the latter sinuate, angularly dilated medially; tergites three to five each with a pair of spots, those on tergite five narrowly separated medially on the posterior margin; antennal scrobes carinate above; genae rounded posteriorly, the posterior margin not carinate; thorax equal in width posteriorly and anteriorly; lateral margins of dorsum of thorax distinctly emarginate at the mesonotal area; scutellar scale entirely absent; mesonotal-scutellar suture absent; posterior face of propodeum perpendicular to the dorsum of propodeum, both distinctly asperate; lateral margins of posterior face of propodeum denticulate; sides of propodeum with moderately large punctures, sparse anteriorly, very close and confluent posteriorly; second tergite with moderately large punctures visible through the pubescence and closely interspersed with fine punctures; anterior half of pygidial area irregularly rugose, the posterior half distinctly granulate; second sternite with large, close punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 11 mm.

Holotype. ♀, Mexico: Iguala, Guerrero (*Hoege*), in British Museum (Natural History).

Easily recognised by the asperate propodeum with the posterior face perpendicular to the dorsum, the thorax equal in width anteriorly and posteriorly, the non-carinate, posterior margin of the genae, and the irregularly rugose, anterior half of the pygidial area, with the posterior half distinctly granulate.

Timulla (Timulla) ruida sp. n.

Pl. 5, fig. 90, ♀.

Female. Head, abdominal tergites medially and last two segments of the abdomen, black, except most of the mandibles, antennal tubercles, scape, pedicel and first segment of flagellum, ferruginous; thorax, legs and remainder of abdomen, ferruginous; head throughout clothed with sparse, pale pubescence, somewhat thicker on the vertex posteriorly; thorax clothed with sparse, pale pubescence, except the dorsum with sparse, ferruginous pubescence; abdomen beneath clothed with sparse, pale pubescence, thicker at the posterior margin of the sternites; abdominal tergites clothed in part with black pubescence, the pale pubescent markings as follows: a complete, posterior marginal band on the first tergite; a pair of broad, sublinear, anterior spots on the second tergite extending from the anterior margin to the transverse midline, and also a very broad, posterior marginal band, the anterior margin of the latter sinuate; tergites three to five each with a pair of quadrate spots, those on tergite five narrowly separated medially on the posterior margin; antennal scrobes carinate above; front and vertex coarsely rugoso-punctate; posterior margin of genae not carinate; thorax equal in width posteriorly and anteriorly; lateral margins of dorsum of thorax crenulate, distinctly and shallowly emarginate at the mesonotal area; scutellar scale entirely absent; mesonotal-scutellar suture entirely absent; dorsum of thorax very coarsely strongly punctate, the punctures exceedingly large; lateral margins of posterior face of propodeum denticulate; sides of propodeum coarsely punctate; second tergite with moderately large, distinct punctures visible through the pubescence and closely interspersed with fine punctures; anterior half of pygidial area irregularly rugose, the posterior half distinctly granulate; second sternite with large, distinct, close punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 11 mm.

Holotype. ♀, Mexico: Campostela, Nayarit, 17.vii.1933, in University of Minnesota collection, courtesy Ward's Natural Science Establishment.

Paratype. ♀, Mexico : Vulkan, Colima, 1918 (*J. Laue*).

The absence of the scutellar scale, the very coarsely sculptured head and dorsum of thorax, ferruginous legs and pale pubescent pattern of the abdominal tergites distinguish this species.

Timulla (Timulla) trifolia sp. n.

Pl. 5, fig. 91, ♀.

Female. Head, abdomen and legs, black; thorax entirely ferruginous; head clothed with sparse, pale pubescence, except the front and vertex with sparse, black pubescence; thorax clothed with sparse, pale pubescence, except the dorsum with sparse, dark ferruginous pubescence; abdomen beneath clothed with sparse, pale pubescence, thicker at the posterior margin of the sternites; abdominal tergites clothed in part with black pubescence, the pale pubescent markings as follows : a complete, broad, posterior marginal band on the first tergite; second tergite with a pair of large, quadrate spots extending from the anterior margin almost to the transverse midline, and a very broad, posterior marginal band, the anterior margin of the latter straight, not sinuate, the black pubescent area thus enclosed trilobate, somewhat resembling a clover leaf; tergites three to five each with a pair of transverse spots extending to the lateral margin, those on tergite five widely separated; antennal scrobes carinate above; genae densely, coarsely punctate; head beneath with two pairs of longitudinal carinae, one pair beginning at each gular tooth and extending a short distance posteriorly, the second pair more median, beginning posterior to the gular carina and extending to the posterior margin of the head; thorax slightly broader posteriorly than anteriorly; lateral margins of dorsum of thorax only very shallowly emarginate at the mesonotal area; scutellar scale present, but not conspicuous; mesonotal-scutellar suture indistinct; lateral margins of posterior face of propodeum denticulate; anterior half of sides of propodeum with a few, moderate, shallow punctures, the posterior half with large, coarse, confluent punctures; second tergite with moderate punctures visible through the pubescence and closely interspersed with fine punctures; anterior half to two-thirds of pygidial area longitudinally rugose, the posterior half to third distinctly granulate; first sternite with a high, prominent, median, longitudinal carina; second sternite with moderately large, distinct punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 9 mm.

Holotype. ♀, Mexico : Chichen Itza, Yucatan, 29.vi. (*J. Bequaert*), in University of Minnesota collection.

Paratype. ♀, Mexico : Chichen Itza, Yucatan, 29.vi. (*J. Bequaert*).

Related to *ferocula*, but differs in the pubescent pattern of the abdomen as well as other characters mentioned in the discussion of that species.

Timulla (Timulla) ferocula sp. n.

Pl. 5, fig. 92, ♀.

Female. Head, abdomen and legs, black, except the mandibles proximally tinged with ferruginous; thorax entirely ferruginous; head clothed with sparse, pale pubescence, except the front and vertex clothed with sparse, black pubescence; thorax clothed with sparse, pale pubescence, except the dorsum clothed with sparse, ferruginous pubescence; abdomen beneath clothed with sparse, pale pubescence, thicker at the posterior margin of the sternites; abdominal tergites clothed in part with black pubescence, the pale pubescent markings as follows : a complete, broad, posterior marginal band on the first tergite; second tergite with a pair of anterior, large, triangular spots extending from the anterior margin to the transverse midline, the apex of the triangular spots at the transverse midline,

and a very broad, posterior marginal band, the anterior margin of the latter sinuate, roundly dilated medially and laterally posterior to the anterior spots; tergites three to five each with a pair of transverse spots extending to the lateral margin, those on tergite five widely separated; antennal scrobes carinate above; head beneath without longitudinal carinae; genae moderately, closely punctate; thorax slightly broader posteriorly than anteriorly; lateral margins of dorsum of thorax only very shallowly emarginate at the mesonotal area; scutellar scale present, but not conspicuous; mesonotal-scutellar suture distinct; lateral margins of posterior face of propodeum denticulate; sides of propodeum with sparse, moderate punctures throughout; second tergite with moderate, distinct punctures visible through the pubescence and closely interspersed with fine punctures; pygidial area irregularly rugose anteriorly, distinctly granulate posteriorly; first sternite with a prominent, high, median, longitudinal carina, much higher posteriorly than anteriorly; second sternite with large, distinct punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 12 mm.

Holotype. ♀, Mexico: Chichen Itza, Yucatan, 29.vi. (*J. Bequaert*), in University of Minnesota collection.

Paratype. ♀, Mexico: Chichen Itza, Yucatan, 29.vi. (*J. Bequaert*).

Related to *trifolia*, from which it differs as indicated in the key, in lacking longitudinal carinae on the ventral aspect of the head and in the genae being only moderately punctate. Similar in appearance to *derelicta* (Smith), but the thorax is not so elongate, the mesonotal area not so deeply emarginate, and the head and thorax less coarsely punctured. The paratype is only 9 mm. in length.

Timulla (Timulla) chrysea sp. n.

Pl. 5, fig. 93, ♀.

Female. Head, abdomen and legs, black; thorax entirely ferruginous; head clothed with sparse, pale pubescence, except the front and vertex with sparse, black pubescence; thorax clothed with sparse, pale pubescence, except the dorsum with sparse, ferruginous pubescence; abdomen beneath clothed with sparse, pale pubescence, thicker at the posterior margin of the sternites; abdominal tergites clothed with black pubescence, except for the golden pubescent markings as follows: a complete, posterior marginal band on the first tergite; second tergite golden pubescent throughout, except a pair of large, lateral, circular, slightly postmedian, black pubescent spots, and a very large, elongate, subrectangular, median, black pubescent spot extending from the anterior margin posteriorly two-thirds the length of the tergite; tergites three to five golden pubescent, except that on the third tergite broadly interrupted medially, the fourth moderately interrupted medially and the fifth narrowly interrupted medially; antennal scrobes carinate above; thorax not broader posteriorly than anteriorly; lateral margins of dorsum of thorax strongly crenulate, distinctly but shallowly emarginate at the mesonotal area; scutellar scale present and distinct; mesonotal-scutellar suture distinct; lateral margins of posterior face of propodeum denticulate; sides of propodeum with small, sparse punctures anteriorly, the punctures closer posteriorly; second tergite with moderate punctures visible through the pubescence and closely interspersed with fine punctures; pygidial area weakly granulate throughout; second sternite with moderately large, distinct punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 7·5 mm.

Holotype. ♀, Costa Rica: Cartago, 1000 m., in University of Minnesota collection.

Paratype. ♀, Costa Rica: Higuito, San Mateo, 900 m.

Superficially somewhat resembles *aureata*, but the anterior, golden pubescent

markings are connected with a very broad, posterior band setting off three black pubescent spots as described above, and tergites three to five have the pubescent spots extending to the lateral margins of the respective tergites.

Timulla (Timulla) interstincta sp. n.

Pl. 5, fig. 94, ♀.

Female. Head, abdomen and legs, black, except the mandibles proximally ferruginous; thorax entirely ferruginous; head clothed with sparse, pale pubescence, except the front and vertex with sparse, black pubescence; thorax clothed with sparse, pale pubescence, except the dorsum clothed with sparse, ferruginous pubescence; abdomen beneath clothed with sparse, pale pubescence, thicker at the posterior margin of the sternites; abdominal tergites clothed in part with black pubescence, the pale pubescent markings as follows: a complete, posterior marginal band on the first tergite; second tergite with a pair of large, anterior spots, the latter extended laterally to meet the pale pubescence of the lateral margins, and a very broad, posterior marginal band, the latter with the anterior margin produced laterally towards the anterior spots; tergites three to five each with a pair of transverse spots extending along the posterior margin to the lateral margins, those on tergite five confluent medially on the posterior half; antennal scrobes carinate above; thorax not broader posteriorly than anteriorly; lateral margins of dorsum of thorax shallowly emarginate at the mesonotal area; scutellar scale present and distinct; mesonotal-scutellar suture indistinct; sides of propodeum with moderate, sparse punctures on the anterior half, with large, close punctures on the posterior half; second tergite with moderate punctures visible through the pubescence and closely interspersed with fine punctures; pygidial area rugose anteriorly, granulate posteriorly; second sternite with large, distinct punctures; legs clothed with sparse, pale pubescence; calcaria pale. Length, 8 mm.

Holotype. ♀, GUATEMALA, in Muséum National d'Histoire Naturelle, Paris.

Paratypes. ♀, GUATEMALA: Quezaltenango, 1885 (*Paganini*); ♀, Zacapa, 13.xii.1911; 3 ♀♀, Guatemala City (*Champion*); 2 ♀♀, Capetillo (*G. C. Champion*); ♀, El Zumbodor, 2500 ft. (*Champion*); 2 ♀♀, Guatemala; ♀, MEXICO: Soconusco district, Chiapas (*L. Hatzen*).

Related to *chrysea*; differs in having the pubescence pale rather than golden, in having the anterior, pubescent spots of the second tergite separated from the posterior marginal band, the spots on the fifth tergite connected by a definite line, and the sides of the propodeum more strongly punctate.

Timulla (*Timulla*) *gaumeri* (Cameron). (New combination.)

Pl. 5, fig. 95, ♀.

Mutilla gaumeri Cameron, 1894, *Biol. Centr.-Amer., Hymen.* **2**: 276, pl. XIII, fig. 12, female.
Mutilla gaumeri Dalle Torre, 1897, *Cat. Hymen.* **8**: 42, female.
Mutilla gaumeri André, 1903, *Gen. Ins.* **11**: 73, n. 43, female.

Type. ♀, MEXICO: Temax, North Yucatan (*Gaumer*), in British Museum (Natural History).

Specimens examined. ♀, MEXICO: Temax, North Yucatan (*Gaumer*); ♀, Chichen Itza, Yucatan, 29.vi. (*J. Bequaert*).

Both the above specimens were compared with Cameron's type. Easily recognised by its almost entirely black colour (the propodeum is tinged slightly with ferruginous laterally), the golden pubescent markings, the front and vertex

entirely, densely, pale pubescent, and the thorax distinctly broader posteriorly than anteriorly.

Timulla (*Timulla*) *contigua* Mickel.

Pl. 5, fig. 96, ♀.

Timulla (*Timulla*) *contigua* Mickel, 1937, *Ent. Amer.* (n.s.) **17** : 107–109.

Holotype. ♀, Texas : Brownsville, 25.v.1934 (*J. N. Knull*), in Ohio State University collection, Colombus, Ohio.

No specimens of this species are known from Mexico, but since the type locality is at Brownsville, Texas, it will undoubtedly be found in north-eastern Mexico.

Geographical Catalogue of Species.

Mexico.

adrastis sp. n. ♂.
aerolla (Cameron). ♂.
amulae (Cameron). ♂.
aureata sp. n. ♀.
bituberculata sp. n. ♂.
collina sp. n. ♀.
cyllene (Cameron). ♂ and ♀.
cyra (Cameron). ♂ and ♀.
daedala (Cameron). ♀.
damalis sp. n. ♀.
delecta sp. n. ♀.
derelicta (Smith). ♀.
direpta sp. n. ♀.
disgrega sp. n. ♀.
divergens sp. n. ♂.
falsa (Dalle Torre). ♀.
ferocula sp. n. ♀.
gaumeri (Cameron). ♀.
grotei (Blake). ♂ and ♀.
hoegei (Cameron). ♀.
impudica (Cameron). ♀.
incensita sp. n. ♀.
interstincta sp. n. ♀.
leona (Blake). ♂ and ♀.
mexicana (Cameron). ♀.
murcia sp. n. ♀.
navasota subsp.
nebulosa Mickel. ♂ and ♀.
neobule Mickel. ♂.
nitela Mickel. ♂.
oajaca (Blake). ♂.
obscurella sp. n. ♀.
operosa sp. n. ♀.
ordinaria (Smith). ♂.
osberti (Cameron). ♂.
philyra sp. n. ♀.
pilatrix sp. n. ♀.
prema (Cameron). ♂.
prominens subsp.
forreri (Cameron). ♂.
prominens subsp.
prominens (Cameron). ♂ and ♀.
psyra (Cameron). ♂.
rhanis sp. n. ♀.
ruida sp. n. ♀.
simplex sp. n. ♂.
suffusa sp. n. ♀.
suspensa subsp. *suspensa* (Gerstaecker). ♀.
talus (Cameron). ♂.
taygete sp. n. ♂.
trifolia sp. n. ♀.
tyro Mickel. ♂ and ♀.

British Honduras.

aureata sp. n. ♀.
bituberculata sp. n. ♂.
collina sp. n. ♀.
mexicana (Cameron). ♀.
osberti (Cameron). ♂.
prominens subsp.
prominens (Cameron). ♂ and ♀.
spaco sp. n. ♂.
taygete sp. n. ♂.

Guatemala.

antiqua sp. n. ♂.
aureata sp. n. ♀.
clonia (Cameron). ♀.
damalis sp. n. ♀.
derelicta (Smith). ♀.
harpagata sp. n. ♀.
interstincta sp. n. ♀.
ordinaria (Smith). ♂.
osberti (Cameron). ♂.
pilatrix sp. n. ♀.
prominens subsp.
prominens (Cameron). ♂ and ♀.
taygete sp. n. ♂.
vacuna sp. n. ♀.

Nicaragua.

belti (Cameron). ♀.
orthona (Cameron). ♂.
prominens subsp.
prominens (Cameron). ♂ and ♀.

Costa Rica.

absentia sp. n. ♀.
aureata sp. n. ♀.
bituberculata sp. n. ♂.

bradleyi sp. n. ♂.
chrysea sp. n. ♀.
connexa (Cameron). ♂.
derelicta (Smith). ♀.
gerstaeckeri sp. n. ♀.
harpagata sp. n. ♀.
lilea (Cameron). ♀.
ordinaria (Smith). ♂.
orthona (Cameron). ♂.
phiala sp. n. ♀.
prominens subsp.
prominens (Cameron). ♂ and ♀.
subrobusta (Cameron). ♀.
talus (Cameron). ♂.
taygete sp. n. ♂.
tumidula sp. n. ♂.
wheeleri sp. n. ♀.

Panama.

buscki sp. n. ♂.
centroamericana (Dalle Torre). ♀.
connexa (Cameron). ♂.
continua sp. n. ♀.
heterospila (Gerstaecker). ♀.
labdace sp. n. ♂.
lilea (Cameron). ♀.
nisa sp. n. ♀.
orthona (Cameron). ♂.
porcata (Cameron). ♀.
proclivis sp. n. ♂.
raui sp. n. ♀.
runata sp. n. ♀.
segesta sp. n. ♀.
selene sp. n. ♀.
subrobusta (Cameron). ♀.
talus (Cameron). ♂.
thura (Cameron). ♂.

Cuba.

senex (Guérin). ♂ and ♀.

Jamaica.

trimaculosa sp. n. ♀.

Guadeloupe.

ashmeadi sp. n. ♂.
guadeloupensis Mickel. ♀.

Dominica.

dominica sp. n. ♀.

St. Vincent.

ashmeadi sp. n. ♂ and ♀.
rectanguloides sp. n. ♂ and ♀.

Trinidad.

bitaeniata (Spinola). ♀.
byblis Mickel. ♂.
eriphyla sp. n. ♀.
mediata (Fabricius). ♂ and ♀.
nisa sp. n. ♀.
rectangulum (Spinola). ♂ and ♀.
rufogastra (Lepeletier). ♂.

Colombia.

bitaeniata (Spinola). ♀.
byblis Mickel. ♂.
caliensis sp. n. ♂ and ♀.
colombiana sp. n. ♀.
coxalis sp. n. ♂.
diversita sp. n. ♀.
eriphyla sp. n. ♀.
gerstaeckeri sp. n. ♀.
heterospila (Gerstaecker). ♀.
labdace sp. n. ♂.
lilea (Cameron). ♀.
mediata (Fabricius). ♂ and ♀.
nisa sp. n. ♀.
proclivis sp. n. ♂.
punctata (du Buysson). ♀.
rectangulum (Spinola). ♂ and ♀.
rufogastra (Lepeletier). ♂.
runata sp. n. ♀.
stimula sp. n. ♀.
thura (Cameron). ♂.
valeria sp. n. ♂.

Ecuador.

hercyna sp. n. ♀.
inca sp. n. ♀.
mediata (Fabricius). ♂ and ♀.
proclivis sp. n. ♂.
ruficornis sp. n. ♀.
valeria sp. n. ♂.

Venezuela.

alcimede sp. n. ♀.
bitaeniata (Spinola). ♀.
byblis Mickel. ♂.
colombiana sp. n. ♀.
discontinua sp. n. ♀.
eriphyla sp. n. ♀.
nisa sp. n. ♀.
punctata (du Buysson). ♀.
rectangulum (Spinola). ♂ and ♀.
rufogastra (Lepeletier). ♂.
stimula sp. n. ♀.
valeria sp. n. ♂.

British Guiana.

herse sp. n. ♀.
mediata (Fabricius). ♂ and ♀.
mediata var. *pexsa* var. n. ♀.
rectangulum (Spinola). ♂ and ♀.
valeria sp. n. ♂.

Surinam.

bitaeniata (Spinola). ♀.
byblis Mickel. ♂.
herse sp. n. ♀.
mediata (Fabricius). ♂ and ♀.
obtusata sp. n. ♂.
rectangulum (Spinola). ♂ and ♀.
valeria sp. n. ♂.

French Guiana.

atriceps (Smith). ♀.
bitaeniata (Spinola). ♀.
byblis Mickel. ♂.
discontinua sp. n. ♀.
eriphyla sp. n. ♀.
herse sp. n. ♀.
mediata (Fabricius). ♂ and ♀.
mediata var. *pexsa* var. n. ♀.
obtusata sp. n. ♂.
rectangulum (Spinola). ♂ and ♀.
rufogastra (Lepeletier). ♂.
valeria sp. n. ♂.
zonata (Spinola). ♀.

Brazil.

adornata sp. n. ♀.
amazona sp. n. ♂.
atriceps (Smith). ♀.
atricornis sp. n. ♂.
balteata sp. n. ♂.
bellatula sp. n. ♂.
bilineatella sp. n. ♀.
brancoensis sp. n. ♀.
byblis Mickel. ♂.
candace sp. n. ♀.
cloelia sp. n. ♂.
corumba sp. n. ♂.
dapsilis sp. n. ♀.
daucia sp. n. ♀.
eris sp. n. ♀.
exclamationis (Cresson). ♀.
gastrica (Gerstaecker). ♂.
hercyna sp. n. ♀.
intercisa sp. n. ♀.
intermissa sp. n. ♀.
leucippe sp. n. ♂.
lineoloides sp. n. ♀.
livilla sp. n. ♀.
lucidiventris (Gerstaecker). ♂.
luederwaldti sp. n. ♂.
macapa (Cresson). ♂.
maevia sp. n. ♂.
manga (Cresson). ♂ and ♀.
mediata (Fabricius). ♂ and ♀.
mediata var. *pexsa* var. n. ♀.
obtusata sp. n. ♂.
odice sp. n. ♀.
oxyrae sp. n. ♂.
perexilis sp. n. ♀.
phalerata (Klug). ♀.
pictoria sp. n. ♀.
pyrene sp. n. ♂ and ♀.
rufiventris (Klug). ♂.
saundersi sp. n. ♀.
scoparia (Gerstaecker). ♂ and ♀.
seducta (Cresson). ♀.
sieberi sp. n. ♀.
spatuliger sp. n. ♂.
spiniclypeata sp. n. ♂ and ♀.
spoliatrix sp. n. ♂.
tarpeia sp. n. ♂.
terminalis (Gerstaecker). ♂.
tinctura sp. n. ♂.
togatula sp. n. ♂.
tulliola sp. n. ♂.
valeria sp. n. ♂.

Paraguay.

bilineatella sp. n. ♀.
daucia sp. n. ♀.
eris sp. n. ♀.
fiebrigi sp. n. ♀.
galatea sp. n. ♀.
manni sp. n. ♀.
nasica sp. n. ♂.
pyrene sp. n. ♂ and ♀.
scoparia (Gerstaecker). ♂ and ♀.
sulcata sp. n. ♂.

Argentine Republic.

baucis sp. n. ♂.
dulcis sp. n. ♂.
duodecimmaculata (André). ♀.
eris sp. n. ♀.
factiosa sp. n. ♂.
flavofasciata (André). ♂ and ♀.
lavinia sp. n. ♂.
lucidiventris (Gerstaecker). ♂.
manni sp. n. ♀.
nasica sp. n. ♂.
odice sp. n. ♀.
pictoria sp. n. ♀.
punctulata sp. n. ♂ and ♀.
pyrene sp. n. ♂ and ♀.
rubripes sp. n. ♂.
scoparia (Gerstaecker). ♂ and ♀.
seducta (Cresson). ♀.
strigata sp. n. ♀.

Bolivia.

boliviana sp. n.
cordillera sp. n. ♂.
manga (Cresson). ♂ and ♀.
manni sp. n. ♀.
merita sp. n. ♂.
mulfordi sp. n. ♀.
pyrene sp. n. ♂ and ♀.
steinbachi sp. n. ♀.
sulcata sp. n. ♂.
tinctura sp. n. ♂.
yungasae sp. n. ♀.

Peru.

cordillera sp. n. ♂.
hedone sp. n. ♂.
inca sp. n. ♀.
manga (Cresson). ♂ and ♀.
mulfordi sp. n. ♀.

Chile.

manni sp. n. ♀.

Literature Cited.

André, E., 1898, Étude sur les Mutillides du Muséum de Paris. *Ann. Soc. ent. Fr.* **67** : 1–79.

——, 1903, Mutillidae. *Gen. Ins.* **11** : 1–77.

——, 1907–1908, Description d'espèces nouvelles de Mutillides appartenant au Muséum d'Histoire naturelle de Paris. *Z. Hymen. Dipt.* **7** : 337–352; **8** : 14–18.

——, 1908, Étude sur les Mutillides du Musée National d'Histoire Naturelle de Buénos Aires. *Ann. Mus. nac. Buénos Aires* (3) **10** : 169–214.

——, 1913, *Mission du Service Géographique de l'Armée . . . Méridien equatorial en Amerique du Sud*, 1899–1906. **10** (1) : 1–4.

Ashmead, W. H., 1899, Superfamilies in the Hymenoptera and Generic Synopses of the Families Thynnidae, Myrmosidae and Mutillidae. *J. N.Y. ent. Soc.* **7** : 45–60.

——, 1900, Report upon the Aculeate Hymenoptera of the Islands of St. Vincent and Grenada, with additions to the Parasitic Hymenoptera and a List of the described Hymenoptera of the West Indies. *Trans. ent. Soc. Lond.* **1900** : 238–239.

——, 1903–1904, Classification of the Fossorial, Predaceous and Parasitic Wasps, or the Superfamily Vespoidea. Mutillidae. *Canad. Ent.* **35** : 303–310, 323–332; **36** : 5–9.

Bischoff, H., 1920, Monographie der Mutilliden Afrikas. *Arch. Naturg.* 86 (A) (1–5) : 1–830, T. 1–7.

Blake, C. A., 1871, Synopsis of the Mutillidae of North America. *Trans. Amer. ent. Soc.* **3** : 217–265.

——, 1886, Monograph of the Mutillidae of North America. *Trans. Amer. ent. Soc.* **13** : 179–286.

Bradley, J. C., 1916, A Revision of *Timulla* Ashmead, a subgenus of *Mutilla* equivalent to the species group *hexagona* of Fox. *Trans. Amer. ent. Soc.* **42** : 199–214.

Burmeister, H. C. C., 1854, Uebersicht der brasilianischen Mutillen. *Abh. naturf. Ges. Halle, SitzungsB.* **2** : 19–29.

——, 1875, Mutillae Argentinae. *Bol. Acad. nac. Ci. exact. Univ. Cordova* **1** : 461–502.

du Buysson, R., 1892, Voyage de M. E. Simon au Venezuela, Dec. 1887–April, 1888. Hyménoptères. *Ann. Soc. ent. Fr.* **61** : 56–58.

Cameron, P., 1894–1896, *Biologia Centrali-Americana, Hymenoptera* 2 : 259–395.

——, 1912, The Hymenoptera of the Georgetown Museum, pt. iv. *Timehri, British Guiana* (3) **2** : 413–416.

Cockerell, T. D. A., 1907, Notes on the Nomenclature of some Hymenoptera. *Entomologist* **40** : 50.

Cresson, E. T., 1865, On the Hymenoptera of Cuba. *Proc. ent. Soc. Philad.* **4** : 110–113.

——, 1887, Synopsis of the Families and Genera of the Hymenoptera of America, North of Mexico. *Trans. Amer. ent. Soc., Suppl.* : 106–107, 263–267.

——, 1902, Descriptions of some *Mutilla* from Brazil. *Trans. Amer. ent. Soc.* **28** : 1–82.

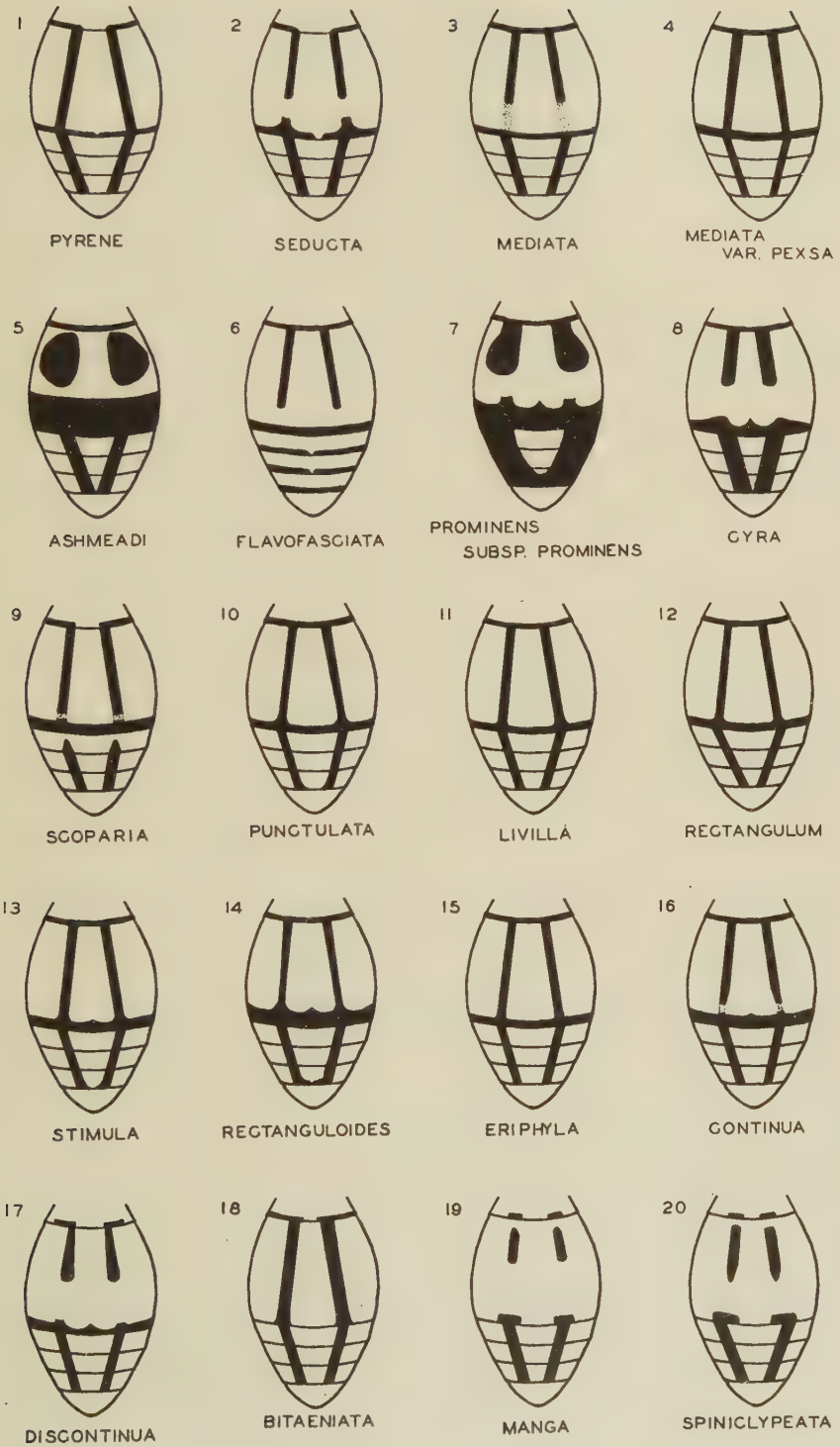
Dalle Torre, C. G. de, 1897, *Catalogus Hymenopterorum* **8** : 1–99.

Fabricius, J. C., 1805, *Systema Piezatorum* : 428–439.

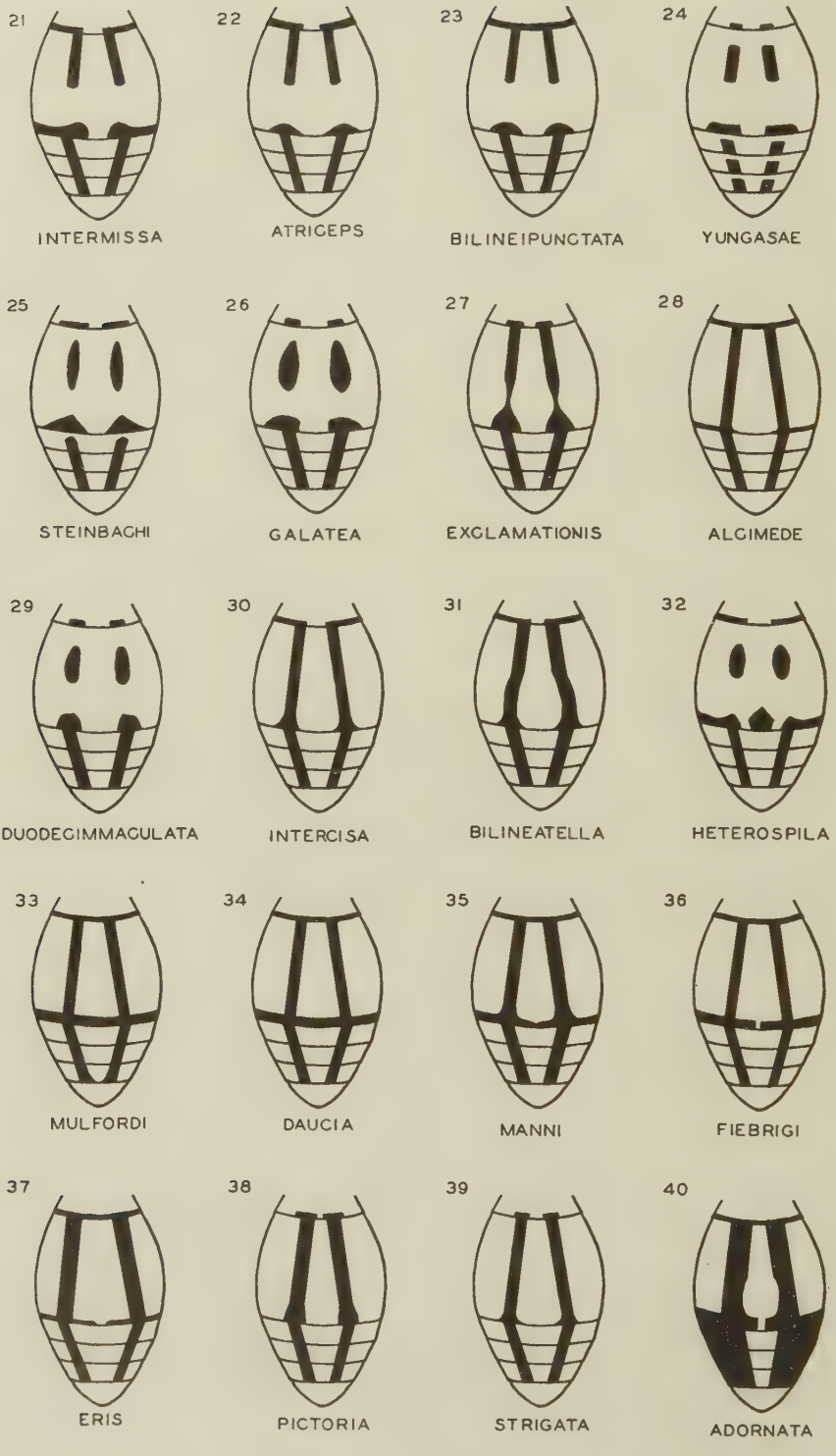
Fox, W. J., 1899, The North American Mutillidae. *Trans. Amer. ent. Soc.* **25** : 219–292.

——, 1900, Arrangement of the extra-American species of *Mutilla* (Described by Cresson and Blake) according to my classification of the Genus. *Ent. News* **11** : 400–401.

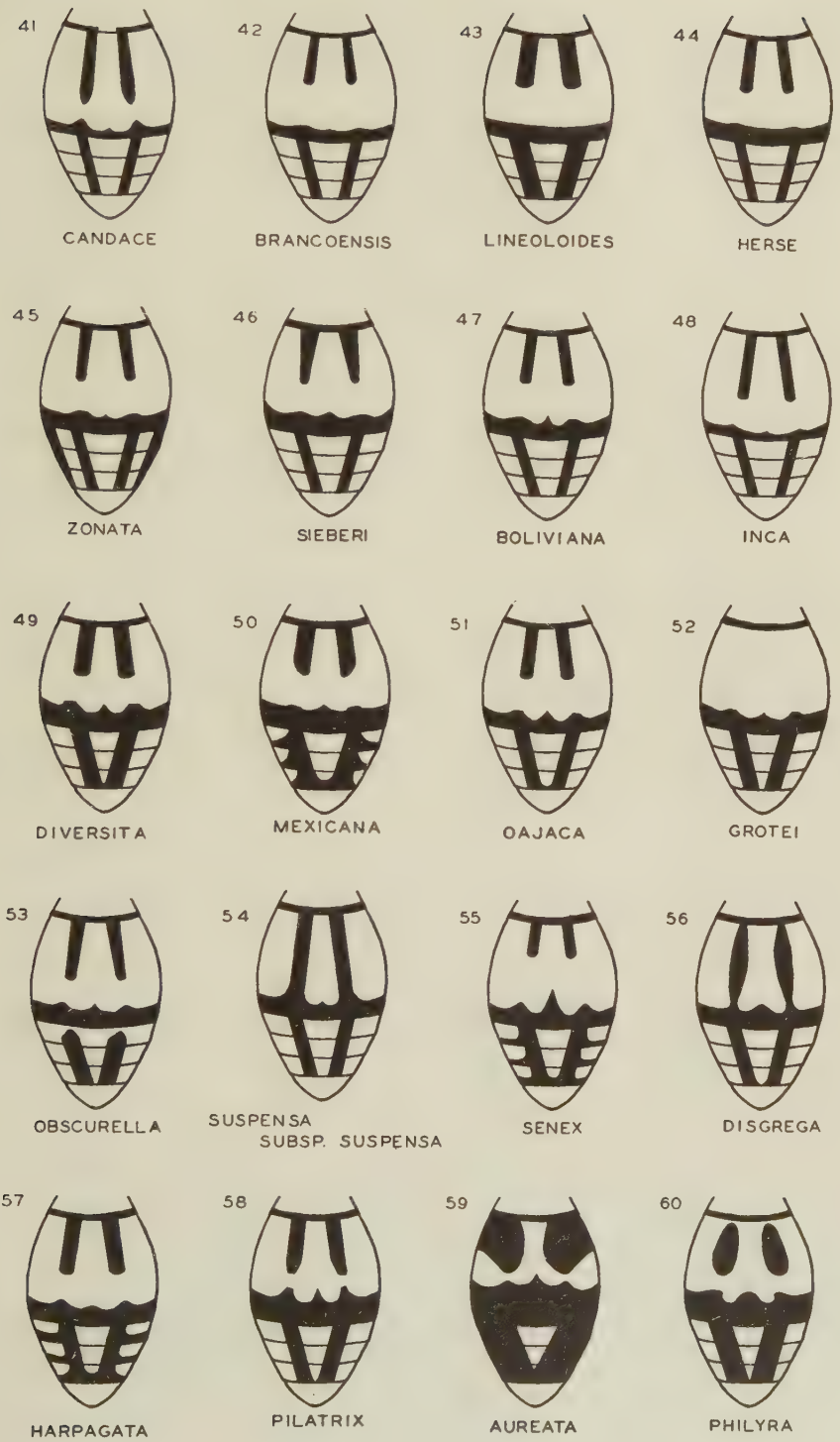
Gerstaecker, A., 1874, Mutillarum Americae meridionalis indigenarum synopsis systematica et synonymica. *Arch. Naturg.* **40** : 41–77, 299–328.



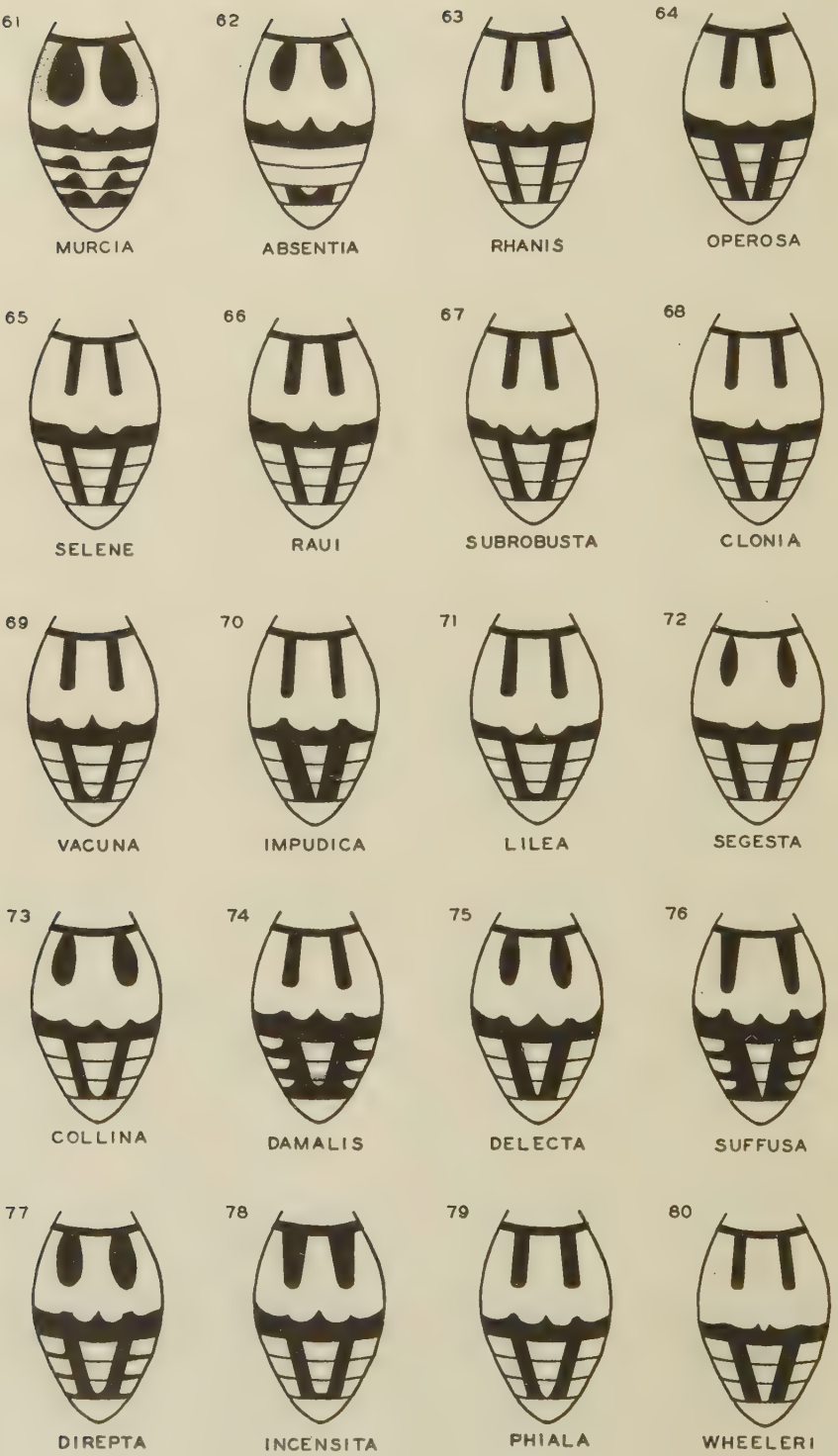
Abdominal pubescent patterns of females in *Timulla*.



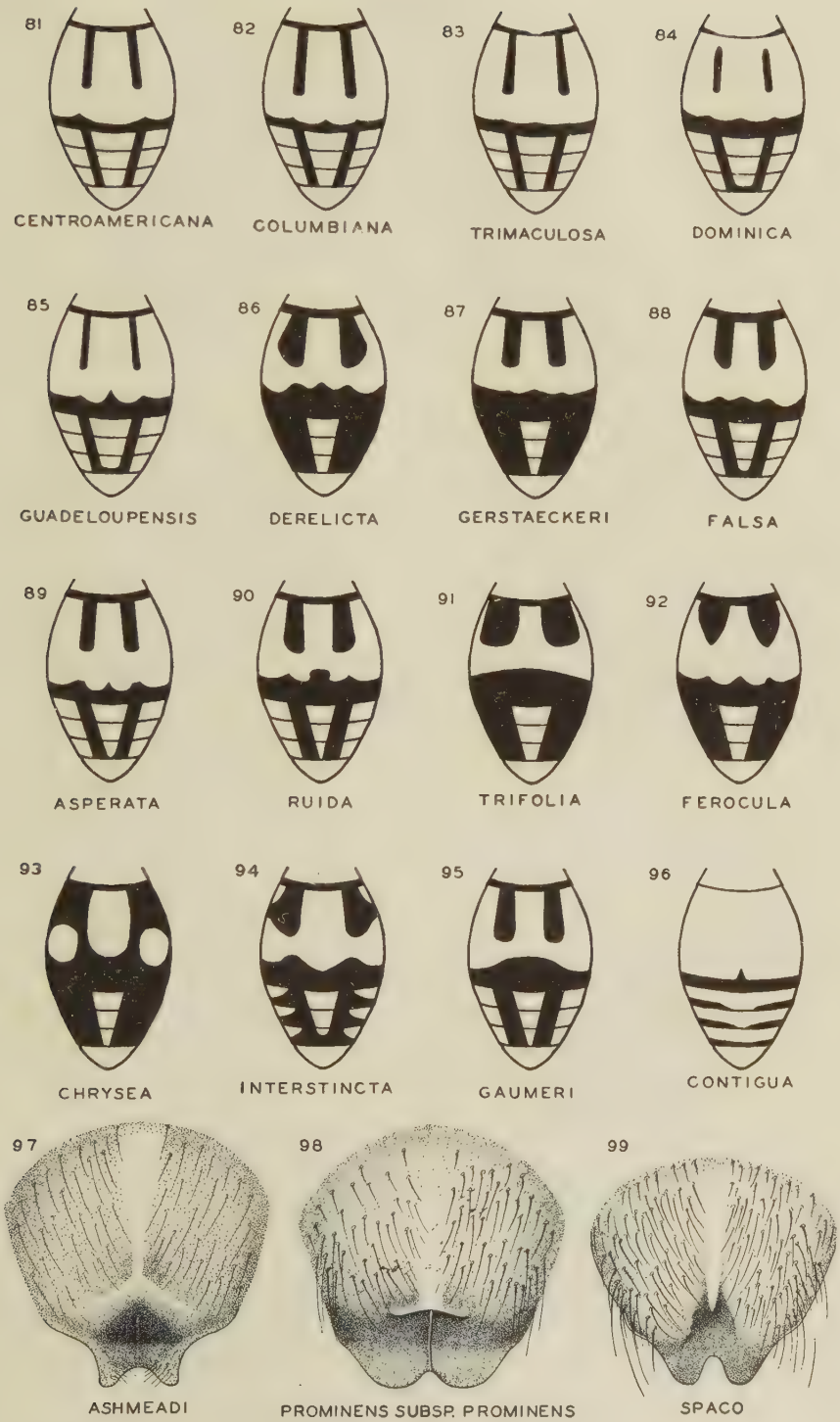
Abdominal pubescent patterns of females in *Timulla*.



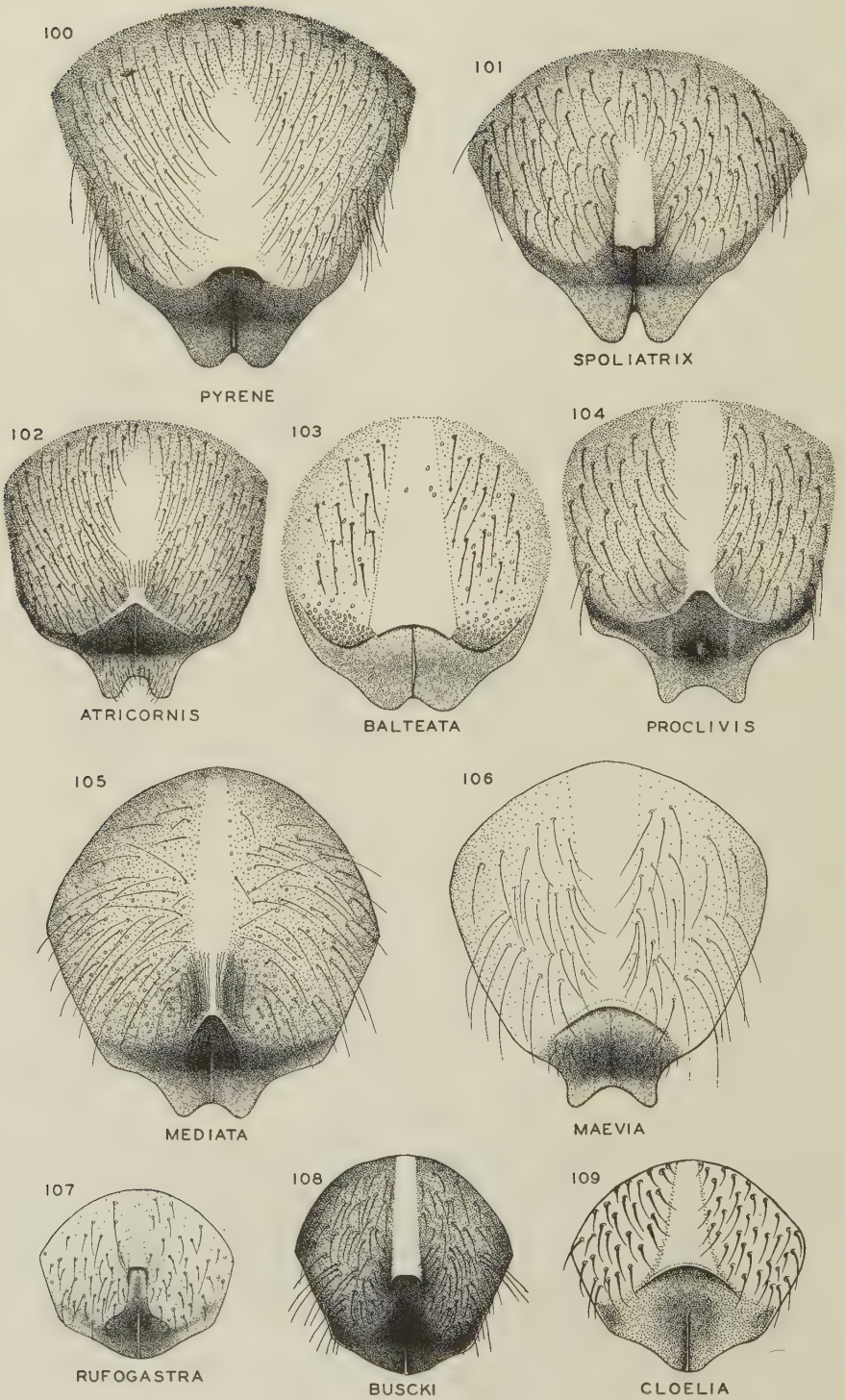
Abdominal pubescent patterns of females in *Timulla*.



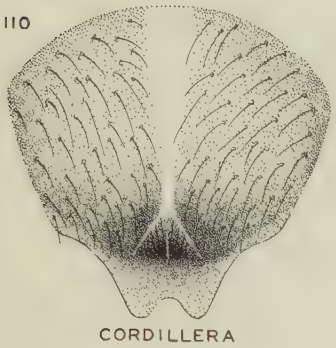
Abdominal pubescent patterns of females in *Timulla*.

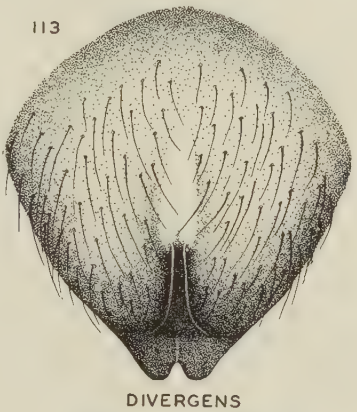


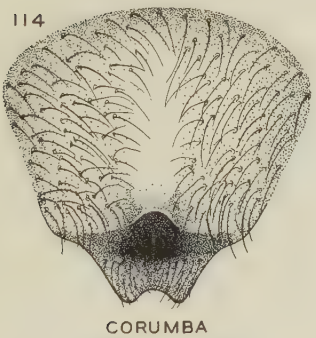
Abdominal pubescent patterns of females in *Timulla* and Last abdominal tergite of males in *Timulla*.

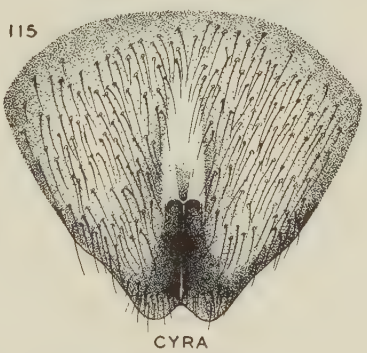


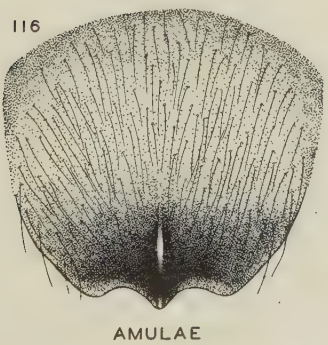
Last abdominal tergite of males in *Timulla*.

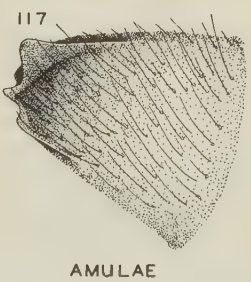




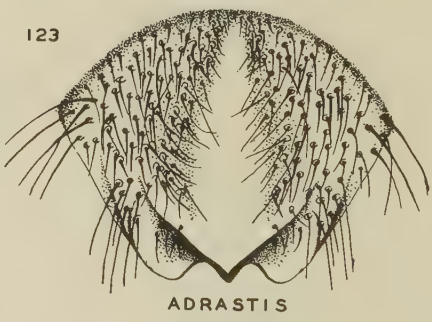


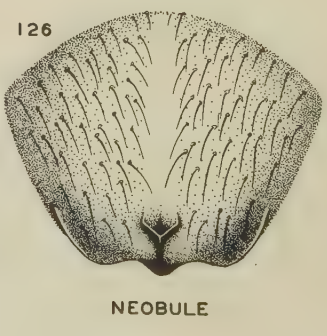




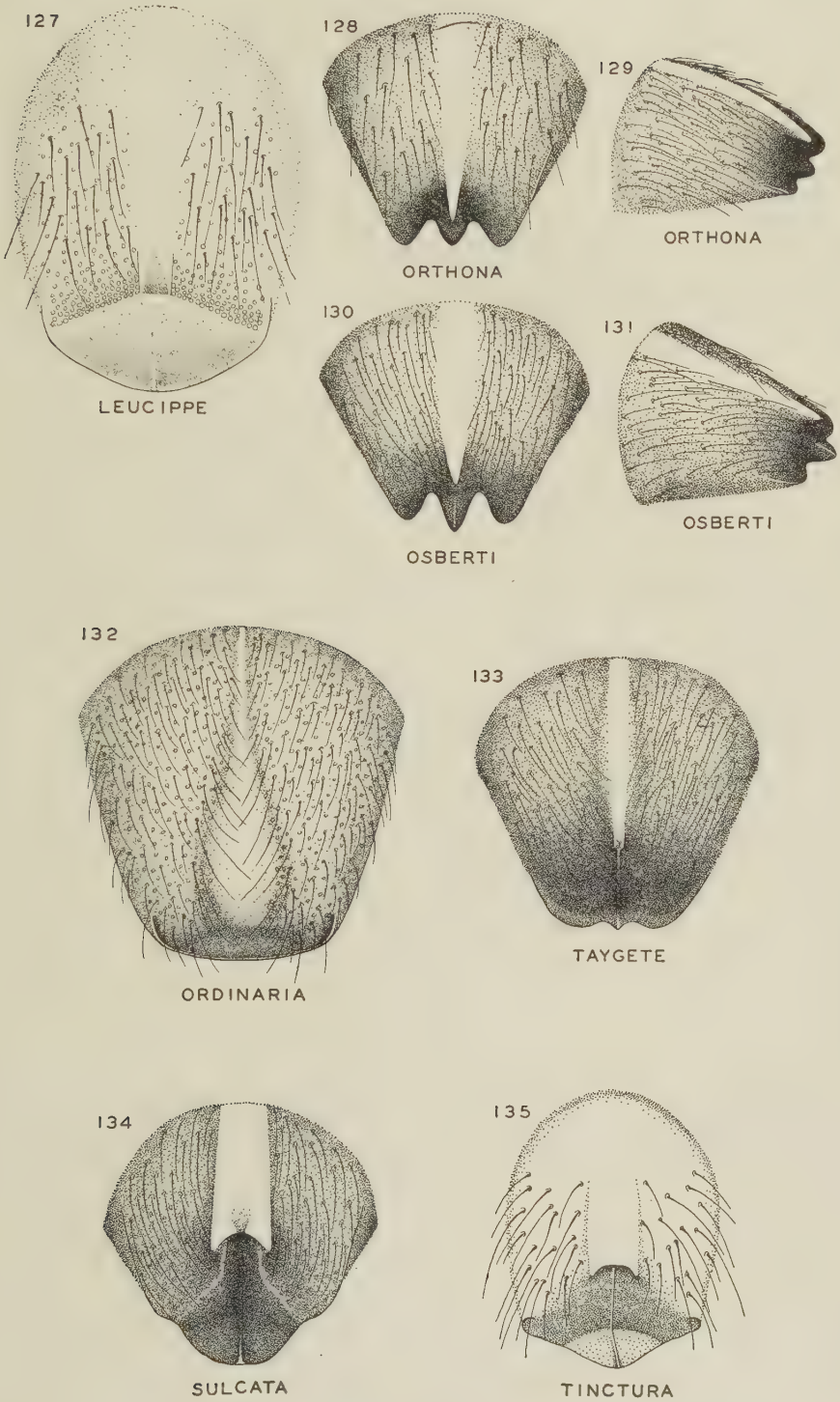


Last abdominal tergite of males in *Timulla*.





Last abdominal tergite of males in *Timulla*.



Last abdominal tergite of males in *Timulla*.

Girard, M., 1879, *Traité élémentaire d'Entomologie* **2** : 989–995.
Guérin-Méneville, F., 1844, *Iconographie du Règne animal de G. Cuvier. Insectes* **7** : 429–430, T. 69.
Howard, L. O., 1904, *The Insect Book* : Pl. 8, fig. 21.
Klug, J. C. F., 1821, Entomologiae brasilianae specimen. *N. Acta Acad. Caes. Leop.-Carol.* **10** (2) : 305–324.
Lepeletier de Saint-Fargeau, A. L. M., 1845, *Histoire naturelle des Insectes. Hyménoptères* **1** : 14; **3** : 517, 589–646.
Linnaeus, C., 1758, *Systema Naturae.* Edit. X. **1** : 582–583.
Lucas, H., 1857, *in* Sagra, *Historica fisica, politica y natural de la Isla de Cuba* (2) **7** : 317.
Mantero, G., 1902, Enumerazione delle Mutille raccolte nell'Alto Paraguay da Guido Boggiani. *Bull. Soc. ent. ital.* **34** : 120–125.
Melander, A. L., 1903, Notes on North American Mutillidae, with Descriptions of New Species. *Trans. Amer. ent. Soc.* **29** : 291–330.
Mickel, C. E., 1928, The Mutillidae of Cuba (Hymenoptera). *Psyche* **35** : 16–28.
——, 1933, The Mutillidae of Formosa. *Ann. ent. Soc. Amer.* **26** : 381–423.
——, 1934, Mutillidae of the Philippine Islands. *Philipp. J. Sci.* **54** : 91–219, pl. 1.
——, 1935, The Mutillid Wasps of the Islands of the Pacific Ocean. *Trans. R. ent. Soc. Lond.* **83** : 177–312.
——, 1937, The Mutillid Wasps of the Genus *Timulla* which occur in North America north of Mexico. *Ent. Amer.* (n.s.) **17** : 1–119, pls. 1–3.
——, 1937, New World Mutillidae in the Spinola Collection at Torino, Italy. *Rev. Ent. Rio* **7** : 165–207.
Olivier, A. G., 1811, *Encyclopédie méthodique. Insectes* **7** : 51–66, 129–130.
Shuckard, W. E., 1840, Monograph of the Dorylidae, a family of the Hymenoptera Heterogyna. *Ann. Mag. nat. Hist.* **5** : 261.
Sichel, J., and Radoszkowski, O., 1869, Essai d'une Monographie des Mutilles de l'Ancien Continent. *Horae Soc. ent. ross.* **6** : 139–309.
Smith, F., 1855, *Catalogue of Hymenopterous Insects in . . . the British Museum.* Mutillidae and Pompilidae. **3** : 1–63.
——, 1879, *Descriptions of new Species of Hymenoptera in the . . . British Museum* : 189–227.
Spinola, M., 1841, Hyménoptères recueillis à Cayenne en 1839 par M. Leprieur. *Ann. Soc. ent. Fr.* **10** : 85–98.
——, 1853, Compte rendu des Hyménoptères inédits provenants du voyage entomologique de M. Ghiliani dans le Para en 1846. *Mem. Accad. Sci. Torino* (2) **13** : 62–63.
Westwood, J. O., 1842, *Arcana Entomologica* **1** : 78.
Zavattari, E., 1910, Catalogo delle Mutille del Museo Zoologico di Napoli. *Ann. Mus. zool. Univ. Napoli* (n.s.) **3** (9) : 1–16.

Explanation of Plates 1–9.

Figs. 1–96 are diagrammatic of the pale pubescent (either silvery or golden) markings of the abdomen of the females. The black parts of the figures represent pale pubescence, except the outline of the abdomen and the lines indicating divisions between segments. Figs. 97–135 illustrate the form of the last abdominal tergite of the males.

Index.

absentia **sp. n.**, 653
adornata **sp. n.**, 622
adrastis **sp. n.**, 631
aerolla, 634
alcimede, 612
amazona **sp. n.**, 608
amulae, 637
antiqua **sp. n.**, 639
ardens (see *oajaca*).
ashmeadi **sp. n.**, 564
asperata **sp. n.**, 668
atriceps, 609
atricornis, 559
aureata **sp. n.**, 651
balteata **sp. n.**, 577
baucis **sp. n.**, 588
bellatula **sp. n.**, 597
belti, 647
bilineatella **sp. n.**, 614
bilineipunctata, 609
bitaeniata, 595
bituberculata **sp. n.**, 634
boliviana **sp. n.**, 627
bradleyi **sp. n.**, 632
brancoensis **sp. n.**, 623
buscki **sp. n.**, 601
byblis, 566
caliensis **sp. n.**, 586
candace **sp. n.**, 622
centroamericana, 665
chroma (see *prominens forreri*).
chrysea **sp. n.**, 671
cloelia **sp. n.**, 589
clonia, 657
clutha (see *talus*).
collina **sp. n.**, 659
colombiana **sp. n.**, 666
confusa (see *heterospila*).
connexa, 629
contigua, 673
continua **sp. n.**, 593
cordillera **sp. n.**, 566
corumba **sp. n.**, 560
coxalis **sp. n.**, 557
cyllene, 643
cyra, 571
daedala, 651
damalis **sp. n.**, 660
dapsilis **sp. n.**, 580
daucia **sp. n.**, 618
delecta **sp. n.**, 661
derelicta, 667
direpta **sp. n.**, 662
discontinua **sp. n.**, 594
disgrega **sp. n.**, 649
divergens **sp. n.**, 573
diversita **sp. n.**, 629
dominica **sp. n.**, 666
dulcis **sp. n.**, 568
duodecimmaculata, 613
eriphyla **sp. n.**, 591
eris **sp. n.**, 620
escada (see *terminalis*).
exacta (see *connexa*).
exclamationis, 612
factiosa **sp. n.**, 597
falsa, 668
ferocula **sp. n.**, 670
fiebrigi **sp. n.**, 619
flavofasciata, 567
friesi (see *connexa*).
galatea **sp. n.**, 611
gastrica, 575
gaumeri, 672
gerstaeckeri **sp. n.**, 667
grotei, 642
guadeloupensis, 667
harpagata **sp. n.**, 650
hedone **sp. n.**, 598
hercyna **sp. n.**, 579
herse **sp. n.**, 625
heterospila, 616
hoegei, 644
impudica, 658
inca **sp. n.**, 628
incensita **sp. n.**, 663
intercisa **sp. n.**, 613
intermissa **sp. n.**, 606
interstincta **sp. n.**, 672
labdace **sp. n.**, 630
lavinia **sp. n.**, 582
leona, 568
leucippe **sp. n.**, 596
lilea, 658
lineoloides **sp. n.**, 624
livilla **sp. n.**, 580
longilineata (see *mediata*).
lucidiventris, 614
luederwaldti **sp. n.**, 605
macapa, 604
maevia **sp. n.**, 558
manga, 603
manni **sp. n.**, 618
mazatlanae (see *oajaca*).
mediata, 560
mediata pexsa **var. n.**, 563
merita **sp. n.**, 583
mexicana, 638
moorei (see *mediata*).
mulfordi **sp. n.**, 617
murcia **sp. n.**, 653
nasica **sp. n.**, 607
navasota, 638
navasota nebulosa, 638
neobule, 647
nicholi, 647
nisa **sp. n.**, 592
nitela, 647
oajaca, 641
obscurella **sp. n.**, 645
obtusata, 563
odice **sp. n.**, 578
operosa **sp. n.**, 655
ordinaria, 632
orthona, 636
osberti, 636
oxyrae **sp. n.**, 599
perexilis **sp. n.**, 612
phalerata, 590
phiala **sp. n.**, 663
philyra **sp. n.**, 652
pictoria **sp. n.**, 620
pilatrix **sp. n.**, 651
porcata, 656

prema, 647
proclivis **sp. n.**, 565
prominens, 569
prominens forreri, 570
psyra, 641
punctata, 595
punctulata **sp. n.**, 576
pyrene **sp. n.**, 553
raui **sp. n.**, 656
rectanguloides **sp. n.**, 585
rectangulum, 584
rhanis **sp. n.**, 654
rubripes **sp. n.**, 615
ruficornis **sp. n.**, 594
rufiventris, 607
rufogastra, 598
ruida **sp. n.**, 669
runata **sp. n.**, 592
saundersi **sp. n.**, 627
scoparia, 574
seducta, 555
segesta **sp. n.**, 659
selene **sp. n.**, 655
senex, 648
sieberi **sp. n.**, 626
simplex **sp. n.**, 633
spaco **sp. n.**, 572
spatuliger **sp. n.**, 615
spiniclypeata **sp. n.**, 604
spoliatrix **sp. n.**, 556
steinbachi **sp. n.**, 610
stimula **sp. n.**, 585
strigata **sp. n.**, 621
subrobusta, 657
suffusa **sp. n.**, 661
sulcata **sp. n.**, 582
suspensa, 646
suspensa jonesi, 646
suspensa sonora, 646
talus, 602
tarpeia **sp. n.**, 601
taygete **sp. n.**, 639
terminalis, 578
thura, 599
tinctura **sp. n.**, 590
togatula **sp. n.**, 581
trifolia **sp. n.**, 670
trimaculosa **sp. n.**, 665
tulliola **sp. n.**, 587
tumidula **sp. n.**, 630
tyro, 571
vacuna **sp. n.**, 657
valeria **sp. n.**, 600
vanduara (see *cyra*).
wheeleri **sp. n.**, 664
yungasae **sp. n.**, 610
zonata, 625